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NEXT ANNUAL SESSION, PHILADELPHIA, JUNE 8-12, 1931

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Third Edition

This work is the accepted authority. The present edition—*the third*—was issued after a revision which amounted to a rewriting.

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INFECTIOUS ASTHMA AND ITS RELATIONSHIP TO CHRONIC SINUS AND PULMONARY DISEASE *

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AND
FRED MAISEL, M.D.
NEW YORK

Under the impetus given by the expansion of the concept of protein hypersensitiveness as a fundamental expression of this malady, great strides have been made in the understanding of some of the etiologic factors involved. The brilliant contributions of Meltzer,[1] Landsteiner,[2] Coca,[3] Cook,[4] Walker,[5] Schloss,[6] Rackeman,[7] and Prausnitz and Kustner,[8] not to mention others, both from the laboratory and the clinical aspects, have been largely responsible for the advances in this field. Nevertheless, we often wonder whether the idea of allergy, which is so rapidly acquiring new and different connotations, is not clouding the physician's vision and hampering him in the understanding of certain syndromes similar in appearance but different in their underlying mechanism. Thus, in the study of the asthma problem in adults, the allergic enthusiast may be confronted with an impasse in at least 47 per cent of cases according to our observations, if he attributes the attacks essentially to the phenomenon of protein hypersensitiveness.

Increasing clinical experience in the study of the adult asthmatic patient leads us to the conclusion that investigation for atopy is only one means of differentiating that from other commonly encountered forms. We agree with Alexander [9] that bronchial asthma should be regarded as something more than an effect resulting from a single process, and a broader conception of the disease is bound to lead to more successful therapeutic measures. This broader view, we believe, lies in the conception that there exists in asthmatic patients a constitutional imbalance of the vegetative nervous system referable especially to the respiratory tract in which an allergic factor may coexist and be one of the many exciting agents of the paroxysm. When the allergic excitant is absent other stimuli, particularly infections of the respiratory tract as held by older clinicians, may be responsible and play the dominant rôle in initiating the attacks. That this occurs in individuals in whom the disturbances of the vegetative nervous system, especially of the vagus nerve and its reflex paths is involved, is evident in the fact that similar infections in normal individuals do not evoke asthmatic paroxysms, just as atopens in atopic individuals, whose autonomic imbalance is not referable to the respiratory tract, may elicit skin or gastro-intestinal symptoms rather than asthma. In other words, the shock tissue in the sense of Coca, which implies not only a specific cellular but also a neural and humoral reaction, varies, dependent on the constitutional make-up of the individual. That such disturbance referable to the autonomic and sympathetic system exists in asthmatic patients has been reemphasized by Baldwin [10] in his paper on studies of the asthmatic state. This author cites the clinical investigations of asthmatic patients by Eppinger and Hess,[11] Barker and Sladen,[12] Falta,[13] Petrén and Thorling,[14] Wilson and Carroll [15] and Alexander and Paddock [16] from the point of view of vagotonia. He also reviews the well known experiments of Brodie and Dixon, who showed that stimulation of the vagus nerve and posterior portion of the nasal mucous membrane resulted in a rise of intratracheal pressure, which was abolished when the vagi were severed. The works of Paul Bert,[17] Einthoven [18] and Mount [19] also elaborate this thesis. The latter, stimulating the vagi in the neck of dogs, guinea-pigs and monkeys, was able to demonstrate the occurrence of bronchial constriction, bronchorrhea, cellular infiltration and emphysema similar to that seen in asthma. Such observations lead one of necessity to the conclusion that more than one exciting agent can set into action a constitutionally labile vegetative nervous system and, naturally, all the more so, local infections of the respiratory tract which may, directly or indirectly, by their toxins irritate the rich network of autonomic and sympathetic nerves supplying the nasal and pulmonary passages, thus precipitating an asthmatic state.

* From the outpatient department of Mount Sinai Hospital.

* Read before the Society for the Study of Asthma and Allied Conditions, New York, Dec. 6, 1930.

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The extent of damage to the tissues of the nose, sinuses, bronchi and alveolar passages following infection have been repeatedly demonstrated by histologic studies of autopsy material in asthmatic patients.

Observations reported by one of us [20] in January, 1930, in "fatal bronchial asthma in nonsensitive patients," coincided with some of those reported in the older literature not studied in the light of the modern knowledge of allergy. As compared with the pathologic areas of fibrosis and lymphatic infiltration about the bronchi, as well as herniation of their walls. Hyalinization of the basement membrane and infiltration of the subepithelial layer with eosinophil cells, lymphocytes and polymorphonuclear leukocytes were striking. There was hypertrophy of the muscularis (work hypertrophy), dilatation and distention with thick mucin of the mucous glands, and extensive emphysema, with ruptured alveoli, whose septums were thickened and

Nonsensitive Asthma

Case	Age	Duration of Asthma	Past History	Roentgenograms of Sinus	Roentgenograms of Chest	Treatment	Course and Result
1	32	2 years preceded by pneumonia	Admitted 8/16/28; diagnosis, asthma, unresolved pneumonia Readmitted 4/13/29	Cloudiness of antrums and ethmoids Cloudiness of antrums and ethmoids	Pneumonic infiltration in left lower lobe Pneumonic infiltration in left lower lobe	Antral washing Antral washing	8/22/28, chest negative; 12/30/29, chest negative Improved
2	40	4 weeks	4/4/28, bronchopneumonia	4/9/28, cloudiness of right antrum and right ethmoids	Pneumonic process at left base	Antral washing	Improved
3	59	9 years	Admitted 6/5/25; history of pneumonia and pleurisy Readmitted 10/19/27	Pansinusitis Pansinusitis	Chest negative; 4/2/28, pneumonic infiltration left base	Antral washing	12/21/28, chest negative
4	40	2½ years	3/28/24, history of colds, headache and dizziness	1/20/28, cloudy ethmoids	6/3/25, unresolved pneumonia in mesial portion of right lower lobe	Local treatment	1/23/28, adhesions between right diaphragmatic pleura mediastinum drawing diaphragm upward; condition improved
5	37	20 years	Admitted 7/1/23	Pansinusitis	11/31/23, unresolved pneumonia left base; 7/20/27, unresolved pneumonia left base	Antral washing partial operation	3/29/27, chest clear; patient improved
6	15	1 year	Admitted 11/11/29; pneumonia and pleurisy	11/12/29, cloudy ethmoids and antrums	11/19/29, unresolved pneumonia left base	Irrigation of pus	Patient improved temporarily
7	28	1 year	Admitted 5/3/29; winter colds and asthma	5/9/29, cloudy left antrum	5/13/29, unresolved pneumonia left base	.....	Patient did not return
8	26	1 year	Admitted 12/12/28; colds and asthma	5/2/29, cloudy antrums and ethmoids	Infiltration left base; possibly bronchiectatic	Local treatment	Patient improved
9	36	10 years	Admitted 1/28/29; recurrent Br. nasal operation 10 years ago	1/28/29, cloudy antrums	Pneumonic infiltration left lower lobe	.....	Patient has not returned
10	60	3 years	Admitted 12/2/27	1/16/28, left antrum cloudy	Pneumonic infiltration both bases probably bronchiectatic	Local treatment	Condition unchanged
11	35	1 year	Colds	6/12/29, cloudy left antrum and ethmoids	Consolidation of left lower lobe	Pus in both antrums; irrigated	Nasal condition improved; asthma persists
12	42	4 months	4/29/29, colds in winter	6/3/29, cloudy right antrum	Right lower lobe, pneumonic infiltration	Pus in both antrums	4/21/30, asthma improved; antrum negative
13	40	7 weeks	5/24/29, colds	Cloudy ethmoids	Right lower lobe, pneumonic infiltration	Local treatment	6/22/29, infiltration less marked; improved; 4/9/30, roentgenogram of chest clear
14	28	3 years	Admitted 8/28/29; asthma all year long	8/28/29, cloudy left frontals, left antrum and ethmoids	Pneumonic infiltration at both bases, suggesting bronchiectasis	Local treatment	Unchanged
15	48	3 years	2/21/30, colds; nasal operation 2 years ago	Cloudy antrums and ethmoids	Consolidation of left lower lobe with some fibrosis	Pus in both antrums	Slightly improved
16	45	2 years	2/28/30; pneumonia 9 years ago	Cloudy antrums and ethmoids	Pneumonic infiltration right lower lobe	Pus in right antrum	Irrigation improved
17	56	1 week	3/1/29, cough and repeated colds	Cloudy antrums	4/20/29, infiltration of left base; 12/11/29, area of fibrosis in left lower lobe	Pus in antrums	12/15/29, improved
18	55	10 years	4/28/30, asthma	Osteoma of left frontal, cloudy antrums and left ethmoids; polypoid degeneration	Fibrosis of both lower lobes; numerous diaphragmatic adhesions	Irrigation of antrums negative	Improvement followed antral washing even though negative
19	53	15 years	7/2/30, pneumonia	Cloudy antrums and ethmoids	Infiltration left lower lobe, also in right lower lobe; pneumonia	Stringy pus in left antrum, polypoid degeneration	Improved

changes found in fatal allergic cases, the lesions in the nonsensitive cases presented striking similarities even to the presence of marked eosinophilia, which has been considered by modern students of the subject as a most important evidence of allergic reactions.

The lesions in the lungs consisted in severe damage to the bronchi; disappearance of the ciliated epithelium, which was replaced by squamous epithelium; extensive fibrotic. Vascular changes, due to secondary involvement of the lesser circulation consequent on the extensive tissue damage which in one of my patients was responsible for the fatal issue, were especially prominent.

In summarizing these observations one is forced to ask whether infection in the sinuses or lungs in an individual with a constitutionally imbalanced vegetative nervous system does not evoke the same mechanism as in true allergy. And if eosinophilia is a criterion of the

20. Harkavy, Joseph: Observations on Fatal Bronchial Asthma, J. Allergy **1**: 136 (Jan.) 1930.

verity of the allergic state, then may not asthma mediated through the presence of infection be considered a form of allergy to infection? The fact that bacterial allergy has not been demonstrated successfully by means of skin tests may imply either that proper types of antigen have not been achieved or that the bacterial antigen in vivo in some way alters the human tissue so that the resulting products arising therefrom may themselves act as sensitizing agents. An analogy so far as skin reactions go is to be found in the drug idiosyncrasies in which no demonstrable cutaneous tests obtain and yet an allergic response consequent on the absorption of the incriminating drug is unequivocal.

The autopsy data of our fatal cases has been referred to because of the similarity in the histories between them and those presented in this paper.

Out of a group of 409 cases of bronchial asthma in adults, 200 were found to be nonsensitive. Of this number, 132 were completely investigated from the point of view of the presence of allergy, as determined by skin tests, and infection as established by clinical and roentgen studies of the nose, sinuses and chest. The underlying causes revealed by these investigations pointed to the fact that the asthma in eighty-seven was primarily due to sinus disease, the ethmoids and the antrums being chiefly implicated, while clinically the lungs showed secondary bronchitis with no distinctive roentgen finding. Twenty-two patients had unresolved pneumonia, four cases were complicated by bronchiectiasis, and twenty-one patients had sinus disease associated with unresolved pneumonia. The striking number of cases with sinus involvement so largely responsible for the so-called bacterial asthma of other authors needs no elaboration. Workers in this field are familiar with that phase of the subject.

Unresolved pneumonia as a causative factor of asthma was reported by one of us [21] in December, 1922. In following up these cases we have noted that when they become free from attacks, especially during the summer months, the pneumonic infiltration disappears and the lungs heal with the production of adhesions along the diaphragm. Clinically such patients presenting a picture of asthmatic bronchitis in whom roentgen examination shows nothing but adhesions at the base should be regarded as having had a previous or receding inflammatory involvement of the lungs. They undoubtedly still harbor a low-grade infection in the interstitium of the lung, invisible with the roentgen ray and responsible for the cough, thick and tenacious mucopurulent expectoration. We feel that the persistence of the interstitial pulmonary inflammation, as seen in a more exaggerated manner in the more fulminating cases at autopsy, unquestionably plays a rôle in the difficulties encountered in clearing up these conditions. The chronic bronchitis readily diagnosed clinically only serves as a cloak for the deeper and more extensive lesions within the lung parenchyma. How much latent sinus involvement is responsible for keeping up the pulmonary process even though roentgen examinations of these cavities are negative is evident from the comparative observations in two series of cases. In an early group of fifty-seven nonsensitive asthmatic patients observed between the years 1923 and 1927, only seven showed a combined sinus and pulmonary infection; in a later series of forty-five cases, fourteen showed such combined infection. The latter was studied during 1928 and 1929, when increased experience in these conditions caused us to investigate the sinuses more thoroughly.

In the group that comprises this report, nineteen have been under observation for from three to four years. Of these, the youngest was 17 years of age and the oldest 60. The duration of the disease was from one week to twenty years. Many of these patients had no knowledge of the fact that they had pulmonary infections and attributed the onset of their attacks to an ordinary cold or grip. The insidious involvement of the lung parenchyma was masked by the more striking bronchitis found on physical examination.

COMMENT

A consideration of these cases points to the fact that the pathogenosis of asthma was infection of the upper and lower respiratory tract. The attacks followed so-called colds, which in all probability were the outward manifestations of exacerbations of chronic sinus infection or the results of recurrent bronchopneumonias. These pneumonias were never completely resolved because of constant reinfection from chronically diseased sinuses. It is evident from the protocols of cases 1, 4, 13, 17 and 18, in which the sinuses were persistently treated, that the pneumonic infiltration either entirely disappeared or fibrosis of the previously involved lung with diaphragmatic adhesions ensued. The cases were definitely improved clinically. By this we mean that the cough was lessened; asthmatic attacks, which had lasted for weeks, recurred only occasionally and were very much milder. Case 5, representing a woman of 37, which was followed intermittently since 1923 when the patient showed an unresolved pneumonia, cleared up in March, 1927, as seen by roentgenograms. Clinically the patient was better. Early in 1927 she again returned to the clinic, complaining of severe asthmatic seizures, following a fresh cold. Her sinuses were roentgenographed and pansinusitis was shown to be present, while her lungs showed a recurrent infection in the same lobe that was involved in 1923. Her sinuses were operated on only partly. When last we saw her she was again free from attacks. The recurrence in the same lobe after a number of years is an interesting feature. It is suggestive of microscopic bronchiectasis and its accompanying interstial infection, which flares up with each successive fresh cold and is manifest roentgenographically as a pneumonitis.

Case 11, in which the chest roentgenogram was reported as showing a consolidation of the left lower lobe, has thus far not shown improvement, even though the sinus symptoms are definitely better. The explanation for this lies, in all probability, in the persistence of the pulmonary lesion. All the other patients are clinically better as long as their sinuses are treated, provided the pneumonic lesion has not progressed to bronchiectasis. With the occurrence of bronchiectasis, as seen in cases 10 and 14, very little improvement has followed intranasal therapy; in all probability the extent of lung involvement plays a most important rôle. The degree of irritability of the nervous system is responsible for the explosive attacks. Such patients, as is well known, are readily affected by numerous secondary excitants, such as cold and heat. As Cook has remarked, "The bronchial mucous membrane and smooth muscle fibers of the bronchi have acquired the habit of reacting and manifest this on the slightest provocation from any irritation."

While this is true, we wish to add that this would not occur were there not a definite lesion already present

21. Harkavy, Joseph: Rôle of Unresolved Pneumonia in Bronchial Asthma, J. A. M. A. **79**: 1970 (Dec. 9) 1922.

which is easily sensitized by extraneous factors. Just as, for example, a patient with coronary disease may develop an attack following an abscessed tooth which certainly is not the cause of his angina.

COURSE AND TREATMENT

None of these patients have had radical surgical intervention. The treatment has been largely that of antral washings and topical applications to the ethmoids. Compared with incomplete and questionable nasal surgery, these patients have done as well if not better. The difficulties in nasal surgery are too well known. Exacerbations of sinus attacks in those afflicted and in those in whom partial operations have been done are just as frequent as the prevalence of the common cold. This, after all, is the fundamental cause behind this entire train of symptoms. Infections in individuals whose respiratory mucous membranes offer sites of predilection by virtue of their peculiar constitutional make-up, and whose labile vegetative nervous system is readily shocked in its most vulnerable spot, the respiratory tract, are responsible for the asthmatic paroxysm. Whether the modus opperandi is an irritation of the vagus and sympathetic nerves by bacterial proteins, their toxins, or histamine substances resulting from the splitting up of the proteins of the host, it is impossible to state at this stage of our knowledge. Coca's definition of hypersensitiveness to infection is conservative, but it should take into consideration the patient, who must be constitutionally receptive.

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STAMMERING AS AN IMPEDIMENT OF THOUGHT *

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If ten men, working with hammers, happen to strike their thumbs, these ten subjects, responding to the same stimulus, will react differently. For the purpose of this discussion, let it be presumed that their reactions are as follows:

The first man inspects his thumb.
The second sticks his thumb in his mouth.
The third wraps his thumb in his handkerchief.
The fourth waves his injured hand in the air.
The fifth gesticulates with the hammer.
The sixth flings the hammer to the ground.
The seventh swears.
The eighth counts in order not to swear.
The ninth whistles.
The tenth faints.

Here is rich material for investigation. But what if the investigators come on the scene a little late; they have seen the man's reaction, but they have not seen him strike his thumb. It is therefore the reactions that they proceed to investigate. Being earnest and diligent, they pursue their researches along numerous lines. They study the subject's respiratory curves, his plethysmographic tracings, his psychogalvanic reactions, his latent left-handedness, his repressions and his significant thumb sucking. The outcome of these investigations is naturally a good deal of confused opinion.

All this by way of illustration. These hypothetic circumstances depict what I conceive to be the situation with regard to stammering. The stammerer's thumb has apparently been overlooked, and the investigator has become engrossed in researches that relate to the man's reactions. Every detail from contortion to emotion has been studied and it is possible that the precise nature of the stammer's difficulty is not yet known.

Perhaps the situation will be clarified if some of the data that have been gathered can be discarded. This task will not be easy, for the volume of material is enormous, and it is no simple matter to appraise it. One may, however, venture a general inventory of the information at hand.

Broadly, the investigation of stammering has fallen into three categories embracing the anatomy, the physiology and the psychology of speech. Theories affecting the gross anatomy of the speech organs belong principally to former centuries. Lord Bacon believed that stammering was caused by refrigeration of the tongue and that the symptoms were alleviated by drinking wine in moderation because the wine heateth. About the middle of the nineteenth century Dieffenbach supported the theory that the stammerer's tongue was too low in the floor of the mouth, and he proceeded to elevate it by cutting a wedge transversely from the back of the tongue and sewing the edges of the gap together.

In the twentieth century, attempts are still made to relieve stammering by surgical procedures. The operations, however, are no longer on the tongue but on the frenum, tonsils, adenoids and nasal septum. Yet no student of speech seriously believes today that stammering results from malformation of the speech organs, and one who discusses the anatomy of the question at all falls back on the neurons, the thymus gland, and other things but vaguely understood.

The study of the physiology of speech has seemed more scientific, and over a period of a hundred years there has accrued a wealth of literature on disturbances of respiration, vocalization and articulation. Respiratory disturbances were thought to be responsible for stammering, the cause being found in spasmodic contraction of the diaphragm, in disturbance of the rhythm of respiration and in the attempt to speak on an empty lung.

The seat of stammering has also been found in the vocalizing process, the speech impediment being attributed to refusal of the voice, to ineptitude in the management of the voice and to the stammerer's inability to impart proper tension to the vocal cords.

Articulation has also been indicted, and stammering is found to be imputed to imperfect training of the organs of articulation, to involuntary action of the speech organs and to the use of excessive force in producing initial consonants.

When this material is examined, it is seen that most of it is descriptive. Thus are found precise delineations of inspiratory spasm, expiratory spasm, sublingual spasm, vox tremula, os quadratum, and countless other reactions which the stammerer displays. Yet it could scarcely be said that this study of the physiology of speech had revealed the cause of stammering, and although the study has dealt minutely with the description of spasm, it has failed to account for the spasm itself.

Hence one passes to psychology, and incidentally to the contemporaneous study of speech. Just as physiology has dealt with the triple problems of respiration, vocalization and articulation, so psychology deals with its triad of will, emotion and content of thought.

* Read before the annual meeting of the American Society for the Study of Disorders of Speech, Chicago, Dec. 31, 1930.

Under the category of will, stammering has been attributed to negative attitudes and to speech doubting. Thus Wyneken believed that the speech doubter was hampered by a wavering of the will. He was like a jumper who suddenly hesitated as he was about to spring; it was then too late to stop and too late to jump effectively. But Wyneken failed to explain how the stammerer came to doubt his ability in speech. After Wyneken, the will received little mention as the seat of the stammerer's difficulty.

Emotion has long been suspected in connection with stammering. It was first thought of in simple terms such as embarrassment and self-consciousness. Later the study became detailed, and the stammerer's sublimations were said to have gone awry. This contention is met by the assumption that one's psychoanalytic friends are right and that the problem is one of conflicts and psychic traumas. Then the question arises, Why stammering? Why does not the patient develop facial tic, torticollis, cardiospasm or astasia-abasia? If one admits that emotion accounts for the presence of the nervous disturbance, then one must look for something that determines the character of the disturbance. In the case of stammering one must go beyond the emotion and investigate the verbal thought. This conclusion seems the more inevitable when it is considered that in many cases stammering results from association and imitation; the patient stammers because he has listened to stammering or because he has stammered in jest. His stammering is altogether a second-hand affair. These facts seem to point away from emotion and in the direction of mental speech.

My own feeling in the matter is that stammering is an impediment in thought and not primarily a speech disorder. The disability manifests itself in speech because the speech is patterned on the thought. The thought disturbance, as I view it, is an inability to think the words clearly in the mind. I first explained this a number of years ago as a transient auditory amnesia,[1] my conception of the matter being that the stammerer momentarily lost his mental images of words because his mental imagery was faint or dim. His images might be compared to shadows on the ground in moonlight, while normal images would be comparable to the stronger shadows in sunlight. This faint imagery, it seemed, could not be readily recalled to motivate the speech.

My present conception of the mechanism is a little different, though the theory is not substantially changed. I believe that the verbal imagery momentarily drops out of the stream of consciousness, and that this loss of imagery blocks the stammerer's speech. In the present discussion it therefore makes little difference whether the original imagery is weak or strong; the essential fact is that the stammerer cannot speak without the verbal thought.

This momentary recoil of the verbal imagery from the mind might be compared to a moving picture in which blanks appear on the screen because of blemishes in the film. It is during these momentary blanks that stammering occurs. The stammering that is discerned, however, is not the disturbance of consciousness but the speaker's futile attempt to enunciate words that are not clearly present in the mind. His struggles are not necessarily patterned on the thought disturbance, any more than the carpenter's antics are necessarily patterned on the injury to his thumb. The stammerer may writhe in his chair, hold his breath, jerk his head or struggle to articulate, but he cannot proceed with orderly speech until the verbal thought comes clearly into his consciousness. It is evident that there is a vast difference between speech-block and the contortion with which the stammerer reacts when speech-block confronts him.

The speech-block or thought-block that I have just described represents to my mind the uncomplicated mental process in stammering. The process does not remain uncomplicated, however, when the stammerer develops fear of particular words, for he then begins to look for synonyms and circumlocutions, and if there is no ready escape he may go into a tail-spin of confusion. For the moment, at least, all verbal thought is obliterated. Still other complications occur to disturb the mental processes of speech. But there is no occasion to elaborate further; enough has been said to illustrate my theory that stammering is an impediment of thought and not a speech disorder.

I do not want to urge this theory as final or infallible; I do not even want to imply that the stammerer's thumb has at last been identified. But I do believe that the theory at least points in the direction of the thumb and that in the meantime it affords a working basis for a rational therapy. Therapy becomes a matter of thought training, with attention directed on mental speech and not on the physical production of vowels and consonants.

In discussing the therapeutic aspect of the subject, I will treat the matter in summary rather than in detail, for I have quite recently published a full description of this work.[2]

I feel that the stammerer's first task in speech correction is to learn to stop the physical struggle with which he has formerly met his speech-block. The struggles are futile in that they interfere with the expression of speech and fail to give expression of any kind themselves.

When he has checked the struggle, the stammerer is admonished to give his whole attention to mental speech. He is taught to regard the act of speaking as the process of thinking aloud, and when speaking he is urged to listen quietly for his thoughts. He is told to make no attempt to control the organs of speech but to let the mind broadcast to the mouth and to permit the speech to produce itself.

Much of the pupil's training consists in mental drill. He is at first unable to desist from his struggle with speech, and he is therefore trained to relinquish his attempt at speech altogether and to come to a halt when the teacher signals with a snap of a castanet. A short period of silence then ensues, during which the stammerer regains his composure. When he appears thoroughly tranquilized, he is given the signal to proceed—a light tap of the castanet. There is much rigorous drill of this nature, and the signals or commands are retained in the speech work until the pupil is able to eliminate his physical stammering and to speak quietly with his attention on his thought.

Class work begins with a situation favorable for fluent speech; for instance, with the group reading aloud in unison. Later the pupils are required to read singly, but at any hint of stammering the group joins in and carries the stammerer past his thought-block. There are many variations of this procedure. In one of the exercises the instructor reads aloud with a pupil

1. Bluemel, C. S.: Stammering and Cognate Defects of Speech, New York, G. E. Stechert & Co., 1913.

2. Bluemel, C. S.: Mental Aspects of Stammering, Baltimore, Williams and Wilkins Company, 1930.

and gradually drops out by lowering her voice and omitting phrases here and there. Eventually the pupil finds himself reading alone, but the teacher joints him instantly if he falters. The object of these procedures is to merge easy situations into difficult ones, and to carry the fluency of the one situation into the other.

Another expedient is that of talking in phantom or silent speech; that is, in mere lip movements without voice and without whispering. This the stammerer can usually do fluently. He then repeats the sentence over and over, and gradually adds the element of voice. Eventually he finds himself saying the sentence aloud and as a rule speaking normally. Exercises are conducted with this method of speech during the early part of the course. Therafter at any time in the course the pupil is permitted to resort to phantom speech whenever stammering threatens, and he is allowed to take as much time as he wishes to produce audible speech by the gradual addition of voice.

The three major principles in this work are teaching the stammerer to relinquish his struggle when thought-block ensues; training him to contend with thought-block by focusing his attention on mental speech, and building his confidence by taking him gradually from easy to more difficult situations and by aiding him instantly when stammering appears. In class work the principles are applied in reading, in language games and in spontaneous speech. An attempt is made to secure application of the principles in the home by enlisting the cooperation of the parents.

The work is of course modified to meet the needs of younger and older groups, but the fundamental principle is always the endeavor to train the thinking processes and not the attempt to correct a speech impediment.

In closing, I wish to make a comparison between stammering and the organic diseases. If it is assumed that the organic disease is characterized by inflammation, which is present in nearly every physical illness, one has to consider not only the presence of inflammation but also its effect. One begins with healthy cells in healthy organs, and with the onset of the disease the cells become inflamed and with its continuance many of them die. In consequence, there is damage to the structure of the organ involved. In endocarditis or inflammation of the heart there is partial destruction of the heart valves; consequently leakage of the heart persists when the inflammation subsides. In meningitis many of the brain cells are destroyed; hence the patient may be blind and deaf by the time the infection is brought under control.

It is only when inflammation is cured in the early stages of the disease that the organs escape with their structure practically undamaged. It therefore becomes the aim of the intelligent physician not merely to stop the disease process but also to stop it early enough to preserve the integrity of the organs.

The situation is similar with stammering. One begins with normal thinking processes and healthy emotions. When stammering supervenes, these structures gradually break down. The thinking processes are then marred by indecision and confusion, and the emotional reactions are disturbed by countless fear associations. There is now the conditioned reflex of the behavioristic psychologist, or, to be more precise, there are many conditioned reflexes. This is the situation with the adolescent and the adult, and it follows that the treatment of stammering, in order to be effectual, must be undertaken before these complications arise. In other words, stammering must be treated in early childhood or as soon as the difficulty appears. Fortunately this may in time prove possible through the cooperation of the schools.

The study of stammering has made tremendous strides in the past few decades. The old misconceptions of anatomy have been discarded; ideas on physiology have been adjusted, and conceptions in psychology are being clarified. But, more than this, a phase of organized study is being entered. It is within the potentialities of this new movement to establish early and effectual treatment for stammering and thus to save thousands from untold suffering.

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SYSTEMIC REACTIONS FROM POLLEN INJECTIONS

THEIR CAUSES AND PREVENTION

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With the widespread use of pollen extracts in the treatment of hay-fever and of seasonal asthma, cases have been reported in which injections have resulted in the death of the patient. Duke [1] notes one, Lamson [2] another such fatality. The incidence of nonfatal constitutional reactions is given by Markow and Spain [3] and by Vander Veer, Cooke and Spain [4] as about one in a hundred injections. In studying the literature the impression is gained that the comparatively meager data available as to the occurrence of death from pollen injections do not reflect sufficiently the seriousness of the situation.

With increasing experience and care, the incidence of such reactions has decreased markedly, principally by efforts directed toward guarding against an overdose and too rapid absorption. The incidence of the reactions encountered in my cases is recorded in table 1.

TABLE 1.—*Incidence of Reactions*

Year	Cases	Injections	Reactions	Per Cent per Injection
1928.....	62	695	54	7.76
1929.....	142	2,414	29	1.20
1930.....	168	3,312	21	0.63

A careful analysis was undertaken of all reactions encountered during the pollen season in 1930, in an effort to secure information concerning the mechanism of reactions as well as the means of their prevention. Each patient was requested to remain in the office for one hour following the injection and to report every symptom occurring within six hours subsequently. While table 2 comprises only the cases studied during the season of 1930, this paper concerns also observations made during previous years.

SYMPTOMATOLOGY

Typical Reactions.—Three distinct groups of symptoms characterize a systemic reaction. During the premonitory stage, the patients complain of numbness around the mouth, numbness of the fingers and toes,

1. Duke, W. W.: New Method of Administering Pollen Extract for Purpose of Preventing Reactions, J. A. M. A. **94**: 767 (March 15) 1930.
2. Lamson, R. W.: So-Called Fatal Anaphylaxis in Man, J. A. M. A. **93**: 1775 (Dec. 7) 1929.
3. Markow, Harry; and Spain, W. C.: Ragweed Hay-Fever, J. Allergy **1**: 414-428 (July) 1930.
4. Vander Veer, A., Jr.; Cooke, R. A., and Spain, W. C.: Diagnosis and Treatment of Seasonal Hay-Fever, Am. J. M. Sc. **174**: 101-113 (July) 1927.

flushing of the face and a sensation of itching. This is followed by itching of the eyes, nose and ears, a sensation of heaviness in the region of the sinuses, and sneezing. Frequently pain develops in the chest and particularly in those skin areas of the back and neck which are described by Balyeat [5] as being the seat of a cutaneous reflex occasionally present in asthma. At the site of the injection the local swelling, which appeared soon after the injection, spreads further and develops into urticarial wheals. The sites of previous injections begin to rise and itch.

In the second stage the most characteristic feature is asthmatic wheezing, which has gradually developed from a dry hacking cough, of the type that has been described as characteristic in allergic bronchitis.[6] Diarrhea, vomiting and syncope may occur in certain cases.

In the third stage the urticaria has now become generalized and produced tremendous swellings of the skin and mucous membranes. This condition, if not interfered with, may last from one-half to three hours, while the asthma as a rule subsides in the meantime. The body temperature falls below normal and the pulse rate slows down to below the patient's normal level. Occasionally, vomiting and diarrhea may still be persistent in this period.

If the injection is strictly subcutaneous or intramuscular, the general reaction ordinarily appears in from 25 to 120 minutes. From table 2 it is evident that the sooner the appearance of the local reaction on the arm and the larger the wheal, the more marked the general reaction will be. If the local swelling is moderate one hour after the injection, there is usually no great danger of a generalized reaction and it is fairly safe to dismiss the patient. However, in two patients, delayed reactions of marked severity occurred, seven and one-half hours and twelve hours, respectively, after the injections. Both patients had been given daily injections.

Accelerated Reactions.—Intravenous injections may occur accidentally, which leads to a condition that is always serious. It is marked symptomatically by a reaction that develops within from five to fifteen seconds after the injection and by the complete absence of local swelling at the site of injection. In my experience this has been encountered only twice. In one case the picture approached closely that described by Lamson preceding his fatalities.) The patient became dyspneic and cyanotic and lost consciousness immediately after the injection. The pulse was imperceptible, and the patient was in a complete collapse, which lasted about three minutes before recovery took place. Urticaria appeared after fifteen minutes.

Reactions from back-seepage of the injected pollen into a vein punctured during the injection constitute a more frequent but somewhat less serious mode of reaction. In this case the first signs usually occur within from three to eight minutes following the injection. According to the rapidity of the influx of the extract into the blood stream, the symptoms become more or less violent. The characteristic feature by which this type of reaction is recognized is the bluish discoloration of the site of injection due to extravasated blood. Occasionally a drop of blood may appear at the site of the needle puncture. While this state is not as dangerous as the intravenous injection, it may yet become very grave. In one case in which injection was thus performed, syncope occurred.

TABLE 2.—*Mechanism of Reactions*

Name	Age	Sex*	Date, 1930	Shock Producing Dose‡	Previous Dose‡	Time Between Injection and Shock	Severity	Number of Injection	Probable Cause
1. F. H.	26	♂	6/ 5	50	35	25 min.	++++	3d	Daily injection, coseasonal
2. C. F.	16	♀	6/ 9	1,800	1,400	41 min.	+++	17th	Coseasonal
3. J. C.	8	♂	6/10	240	120	7½ hr. (delayed)	+++	5th	Daily injection, coseasonal
4. D. L.	33	♂	6/16	60	30	30 min.	+++	4th	Coseasonal
5. F. M.	46	♀	7/ 8	90	50	40 min.	++	4th	Unusual sensitiveness
6. Same	..	..	7/21	700	550	3 min.	+++	10th	Back-seepage
7. A. M.	26	♂	7/11	80	30	38 min.	+++	3d	Overdose
8. Same	..	..	7/15	200	120	45 min.	+++	5th	Overdose
9. V. P.	6	♂	7/14	180	100	45 min.	+++	5th	Simultaneous sensitiveness to spring pollen present in air
10. Same	..	..	7/22	500	300	22 min.	+++	7th	
11. J. P.	22	♀	8/ 4	5,000	3,500	65 min.	++	14th	Sensitive to strawberries eaten before
12. S. S.	35	♀	8/ 5	8,000	10,000	15 min.	+++	16th	New extract
13. Same	..	..	8/15	11,000	5,000 (on 8/4)	60 min.	++	13th	Too short interval
14. Same	..	..	8/22	10,000	9,000	60 min.	++	18th	Coseasonal
15. A. G.	24	♀	8/10	15,000	13,000	3 min.	++++	19th	Back-seepage
16. S. G.	21	♀	8/11	550	350	12 hr. (delayed)	++	10th	Too short interval
17. F. T.	40	♀	8/13	12,000	10,000 (on 8/12)	20 min.	+++	17th	Too short interval
18. Same	..	..	8/23	15,000	13,000	37 min.	++	20th	Coseasonal
19. M. A.	32	♀	8/14	18,000	15,000	75 min.	++	20th	Sensitive to shellfish eaten before
20. V. M.	20	♀	8/20	30	.....	30 min.	+++	1st	Overdose
21. E. M.	43	♀	8/30	25,000	20,000	5 min.	++++	20th	Back-seepage, coseasonal

* In this column, ♂ indicates male; ♀, female.
† Treatment with pollen of spring grasses.
‡ Pollen units.

Atypical Reactions.—It was noted that wherever there is an existing allergic manifestation in the body a marked exacerbation of this condition ensues. Patients with existing pollen asthma respond to a dose of the extract not carefully gaged in a most striking way. A more or less severe attack of asthma ensues while other allergic symptoms may not be present. One patient who had mild asthma for several days previous to the injection developed a serious status asthmaticus which came on within forty-five minutes and lasted for three weeks. Particularly, patients with pollen asthma, if given injections with their specific extract during the pollen season, as a rule are very difficult to manage. Usually, the coseasonal treatment has to be abandoned.

Patients who suffer from hay-fever symptoms while they receive injections exhibit the most violent symptoms about the eyes and nose, while other organs such as the lungs and skin are affected to a lesser extent. In a case of ragweed dermatitis and in another case of dermatitis due to chrysanthemum pollen, the skin lesions became greatly enhanced in size and more irritated on the administration of the specific extract. However, no general reaction was noted.

In this connection, it is of interest to quote a case in which a person (S. B.) with gastro-intestinal allergy,

5. Balyeat, R. M.: Reflex Itching in Asthma, J. A. M. A. **92**: 873 (March 16) 1929.
6. Waldbott, G. L.: Allergic Bronchitis, J. Lab. & Clin. Med. **13**: 943 (July) 1928.

sensitive to ragweed, stated that about one hour after each ragweed injection the abdominal pains recurred for about thirty minutes. This brings to mind the experience of Kahn,[7] who reported the development of uterine pains in a multipara following the injection of timothy extract. From all this one may conclude that reactions affect more readily those areas of the organism which have previously been the seat of allergic manifestations.

In two patients (Mrs. A. M. and H. T.) dizziness, headaches, numbness and palpitation were noted as the predominant symptoms. These manifestations were so severe in case H. T. that I was forced to abandon the treatment. Repeated blood pressure readings revealed a definite increase in the blood pressure during these reactions. This fact seems to be paradoxical in view of the constant hypotension experienced during these reactions. However, it is of interest in connection with observations previously recorded on arterial hypertension associated with allergy and with the work of Bally on blood pressure in experimental shock.[8]

Three times in a total number of 6,421 injections, the reaction assumed a strikingly different course, not attributable to pollen. Within one-half to one hour after the injection a severe chill developed followed by high fever, which gradually subsided during a period of from twelve to twenty-four hours. Besides headache and backache no other symptoms were present, especially no respiratory symptoms. This phenomenon has been ascribed to the use of new rubberware in the preparation of extracts. It may be that this phenomenon is entirely apart from the considerations in this paper.

CAUSES

The main cause of reactions is generally attributed to the absorption of an amount of pollen in excess of the tolerance of the patient at that time. Either too sudden an increase in dosage or too sudden an absorption of pollen through the blood stream is responsible. The latter fact is accounted for by accidentally intravenous injections and back-seepage of extract into a punctured vein. There are several ways by which an overdosage with the extract may be brought about:

Individual Sensitiveness.—For extremely sensitive persons the customary increase in dosage during the twelve or fifteen injections is usually too rapid. Some patients do not bear more than 25 per cent increase over the previous dosage without suffering reactions. It therefore is necessary to question each patient regarding the after-effects of the first injections in order to gain an impression as to the individual sensitiveness. Classification of the patients according to sensitiveness as proposed by Cooke is of further aid.

Fresh Extract.—When changing from an old to a new extract, it is necessary to consider the fact that even one week's use of an extract may result in some loss of its strength. With a fresh extract, the dosage therefore should be reduced from 25 to 100 per cent of the intended amount, which should be gaged by the length of time during which the old extract has been in use.

Mistake.—Another reason for reactions has on two occasions been evident when, by mistake, the wrong vial was used containing a more concentrated extract than was intended. It is of prime importance to have the extracts labeled so that such mistakes can be avoided. Some allergists are using labels of different colors for the various strengths. This has been found to be useful.

Too Frequent Injections.—Frequently an accumulation of too large an amount of pollen extract in the system results from too short an interval between injections. Cases 12 and 17 clearly illustrate this fact. The absorption of a new dose before the elimination of most of the previous one may produce the same effect as an overdose. It is a good rule not to repeat an injection of pollen extract until the local reaction from the former one has entirely disappeared. After a reaction has occurred, the following dose should be the same as or less than the one which caused the reaction.

Coseasonal Treatment.—This may account for the accumulation of pollen extract in the system. During its presence in the air the result of an overdose may be brought about by the simultaneous injection of pollen and absorption from the nose. Indeed, from the table of this year's reactions (table 2) it may be seen that among twenty-one reactions seven were brought on in this manner. While I have not discarded the coseasonal method of pollen treatment, I have learned to exercise greater caution in gaging the dosage.

An unusual reaction has been observed the cause of which is analogous to the one previously described. A patient (E. A. R.) who had just received his third preseasonal ragweed injection had entered my laboratory, where he noticed a bottle of dry ragweed powder, which he opened. Thirty minutes later, a very severe reaction resulted with nasal and ophthalmic symptoms prevailing, the only one during his two courses of treatment. Undoubtedly this mishap was caused by the additional absorption of pollen from the mucous membranes of the nose and of the eyes.

Multiple Sensitization.—It happens occasionally that substances other than pollen may contribute toward a reaction. In several cases the reaction could be definitely traced to the ingestion of foods to which the patients were sensitive. In one case (P. R.) particularly, a man sensitive to fish had an unusually severe reaction brought on by eating fish before the injection. This emphasizes the need of thorough testing for substances other than pollen to which the patients may become sensitive during the hay-fever season, as has been pointed out by Cohen.[9] Patients may be instructed not to eat any food before pollen treatment is administered.

Presence of Allergic Manifestations.—It has already been pointed out that, if there is an existing allergic manifestation in the body, a marked exacerbation of this condition may ensue. That such manifestations may contribute to the development of reactions was highly suggestive during the course of my observations.

THERAPY

For the prevention of reactions, the measures previously enumerated, which are directed toward guarding against an overdose, are of the greatest importance. To prevent intravenous injections, I have been accustomed to use a good sized needle and to retract the plunger before injection, watching for blood to appear in the syringe as a sign of venous penetration. To prevent back-seepage, it is advisable to use tight compression with cotton of the site injected for from ten to twenty minutes. However, according to Duke, these measures are not sufficient. He suggests that the pollen extract should be mixed with epinephrine, ephedrine and

7. Kahn, I. S.: Uterine Spasms Complicating Pollen Anaphylactic Reaction, J. A. M. A. **90**: 2101 (June 30) 1928.

8. Waldbott, G. L.: Hypertension Associated with Allergy, J. A. M. A. **94**: 1390 (May 3) 1930. Bally, L. H.: Physiological Studies of the Hypersensitive Rabbit, J. Immunol. **17**: 223 (Sept.) 1929.

9. Cohen, M. B., and Rudolph, J. A.: Hay-Fever: The Importance of Substances Other Than Pollen in the Etiology, Arch. Int. Med. **45**: 742 (May) 1930.

saline solution; at first a small amount of this mixture is to be injected into the arm, which is guarded by a tourniquet above the site of injection. If no symptoms of the effects of epinephrine, such as palpitation and tremor, are observed, the extract injected is not in direct communication with a vein. The tourniquet may then be removed and the injection completed. With the combined effect of the epinephrine and the apparent reduction in the rate of absorption on account of the addition of saline solution and, furthermore, with the assurance of not giving the injection intravenously, Duke reports the complete avoidance of mishaps. This method should therefore be adopted as a routine procedure.

The treatment of a reaction that has made its appearance consists in the injection of epinephrine in doses of from 0.1 to 0.3 cc. in two or more sites over the body, according to the severity of symptoms. Application of a tourniquet above the site of injection to slow down further the absorption of the extract is of distinct value.[10] As a mere symptomatic measure, rubbing the urticarious areas with ice usually shows some subjective improvement.

COMMENT

As has already been brought out, the main cause of a reaction is the absorption into the system of larger quantities of pollen extract than the individual can tolerate at that time. Furthermore, if antigen is being absorbed through other channels in addition to the injection, a reaction may ensue. In order to understand this additional absorption and accumulation of antigen from other channels, the following facts should be recalled:

1. It takes from fifteen to twenty-four hours for an antigen to be entirely absorbed after a subcutaneous injection.[11] Frequently the local swelling from an injection persists for a longer period than this, indicating that the absorption is not yet complete. If during this time a new injection is given, the combination of the two will act as an overdose.

2. Tuft [11] has shown that it takes from two to three weeks for the antigen to be eliminated from the system of an allergic individual. The flaring up of sites of previous injections during this period and the persistence of asthmatic symptoms for from two to three weeks following an overdose in patients with pollen asthma supports this view. This slow elimination of the antigen from the system is undoubtedly another source of accumulation of pollen extract by repeated injections.

3. Pollen absorbed from the air through the nose requires only from half an hour to two hours until it reaches the blood stream.[12] Thus, the effect of an overdose is apt to be produced by pollen present in the air during the coseasonal treatment.

4. Sufferers from hay-fever are often sensitive to substances other than pollen,[9] and absorption of these substances during the time of the pollen injection may also account for an excess of antigen above the patient's tolerance.

One cannot but be impressed by the great clinical resemblance of the mechanism of these reactions to that of the anaphylactic experiment in animals. In both instances there is a previous absorption of relatively small amounts of antigen. The shock producing dose must be relatively large and is best administered intravenously. This analogy regarding the cause is much more striking if one considers the symptoms that arise. Indeed, the larger the dose of pollen extract and the quicker the absorption, the greater is the resemblance of the clinical picture of a pollen reaction to true anaphylactic shock.

Ratner [13] has pointed out that reactions attributable to horse serum are brought on in an analogous way by an overdose of horse serum in patients who have previously been sensitized by either small injections of horse serum or horse dander absorbed from the nose. The close resemblance of the two conditions, shock from pollen and shock from horse serum, is evident.

During reactions resulting from pollen treatment any variety of allergic symptoms may be encountered, such as conjunctivitis, rhinitis, dermatitis, asthma, allergic bronchitis, allergic gastro-intestinal diseases and uterine spasms, as well as the typical shock as it occurs in the most severe forms of a pollen reaction. It was observed that those organs are favored as the seat of allergic manifestations which have previously been subject to them. From the present status of knowledge one may conclude that, when there has previously been a surplus of antigen, new symptoms may arise by the addition of antigen incorporated into the body by the pollen injection.

In a previous publication I [14] have shown that horse serum in small doses produces true asthma. On the other hand, under conditions that permit rapid absorption of an excess amount, horse serum may also account for shock.[13] That also by pollen injections both types of reactions are produced is clearly demonstrated by the evidence brought forth in this paper. The mechanism that determines the occurrence of either reaction is not entirely clear. Shock, however, seems to occur when the absorption of the pollen is accelerated, while the less violent forms of allergy, such as asthma and urticaria, originate when absorption is protracted.

SUMMARY

1. Evidence presented here supports the view that reactions from pollen injections are elicited by an excess of antigen absorption above the patient's individual tolerance.

2. This effect may be produced by too fast absorption, such as an accidental intravenous injection, by the back-seepage of extract into a vein punctured accidentally, or by an overdose of antigen. Factors contributing to the effect of an overdose are: incomplete absorption of an injection given some time previously; absorption of additional pollen through the nose during the pollen season; absorption of substances other than pollen to which the patient is sensitive.

3. The clinical manifestations of pollen reactions appear to be identical with those of reactions from injections of horse serum.

4. From the observation of patients one gains the impression that if the reaction is accelerated it manifests itself as a shock which is very close to, if not identical with, the anaphylactic shock in the experiment with the guinea-pig. If the reaction is not violent enough to cause an anaphylactic shock, allergic manifestations, such as asthma, are produced, localization of which is likely to be determined by the presence of antigen in the affected parts of the body.

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10. Vander Veer, Cooke and Spain (footnote 4). Insley, S. W.: The Control of Immediate Shock Following Hypodermic Medication, J. A. M. A. **94**: 765 (March 15) 1930.

11. Tuft, Louis: Rate of Absorption of Horse Serum After Injection, J. A. M. A. **92**: 1667 (May 18) 1929.

12. Cohen, M. B.; Ecker, E. E.; Breitbart, J. R., and Rudolph, J. A.: The Rate of Absorption of Ragweed Pollen Material from the Nose, J. Immunology **18**: 419-425 (June) 1930.

13. Ratner, Bret: A Possible Explanation of Shock Due to Horse Serum Anaphylaxis, J. A. M. A. **94**: 2046 (June 28) 1930.

14. Waldbott, G. L.: Diphtheria Prophylaxis Among Asthmatic Patients, J. A. M. A. **90**: 290-292 (Jan. 28) 1928.

POTASSIUM THIOCYANATE IN THE TREATMENT OF ESSENTIAL HYPERTENSION

ITS IMPRACTICABILITY *

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The thiocyanates often reduce the blood pressure when given to patients with essential hypertension. The same may be said for the bromides, for phenobarbital, for rest and for other measures. There are, however, such marked limitations and objectionable features to the thiocyanate therapy that I believe, after critical analysis of the literature and of my own results, that the drug has no clinical practicability in essential hypertension. The evidence for this conclusion will be presented.

EVIDENCE IN THE LITERATURE

The greatest drawback of the thiocyanates is their great tendency to untoward reactions. For this reason Pauli,[1] Pal [2] and Von Dalmady [3] gave up the use of the drug in 1912. When it was reintroduced in 1926 by Westphal and Blum,[4] these authors also reported a high incidence of untoward effects. Table 1 shows the various doses used, the amount of drop in blood pressure obtained, and the extent and character of the side reactions reported by writers on the subject. Table 1 indicates, in summary, that (1) there has been a high incidence of distressing symptoms, chiefly among those patients in whom there occurred the unquestionable, significant drops in blood pressure, and that (2) both the untoward symptoms and the large drops in blood pressure occurred mainly after comparatively large doses of the drug.

Therefore, since the literature indicates the impracticability of large doses, what evidence does the same source supply for the value of small doses? Reverting to table 1, and considering as small doses all those equal to or less than a total of 0.38 Gm. (5 grains) daily, I have critically analyzed the results reported in this group. It is seen, first, that several writers include drops in systolic blood pressure of from 20 to 30 mm. as a criterion of reduction in blood pressure by this dosage. One writer (table 1) states that in ten out of twelve patients there was an average drop of 30 mm., which therefore indicates that many of the reductions were less than 30 mm. Another writer (table 1) states that "results varied considerably." These criteria and statements are insufficient for interpreting the hypotensive power of any therapy. As careful a student of hypertension as O'Hare,[5] referring to an average drop of 34 mm. systolic and 10 mm. diastolic in 25 out of 100 patients he had treated with mistletoe, says that "previous experience with hypertensive cases has taught us that such variations frequently occur without any therapy." It would seem that it is only after many months of frequent observation that systolic or diastolic drops of from 10 to 30 mm. can be evaluated as due to therapy. Next, the reports on the effects of small doses by those writers who used 30 mm. or more as their criterion of systolic blood pressure drop may be analyzed. Palmer, Silver and White [6] found that twenty-five out of fifty-nine patients (42 per cent) responded with a drop of 30 mm. or more. However, the drug was given to the individual patients for only three weeks, and only in fourteen out of the twenty-five patients were the blood pressures followed to see whether they increased after the therapy was stopped. Of the fourteen patients followed after the drug was discontinued, nine did not show an increase in blood pressure of 30 mm. or more. Therefore, as Palmer, Silver and White themselves suggest, "it is conceivable that many of these patients, if seen at intervals without treatment, might show similar reductions in blood pressure, merely from being accustomed to medical observation." It is exactly this possibility that I have recently demonstrated in a group of patients.[7]

There is left to consider the reports of two writers who obtained distinctly unsuccessful results with small doses. Fineberg [8] gave 0.1 Gm. (1½ grains) three times a day for ninety days to thirteen patients, and in only one patient did he secure a fall in systolic blood pressure of 30 mm. or more. The fact that he himself treated these patients with sedatives as a control for the three months previous to giving the thiocyanates, together with the fact that he used the thiocyanates for as long as three months in practically all his cases, makes his report especially important. Subjectively, most of his patients felt worse while taking the drug than while taking sedatives. Borg [9] has also mentioned the unpleasant symptoms that occur even with small doses. The second, though slightly less adverse, report is that of Westphal,[4] who used 0.1 Gm. (1½ grains) from three times daily to once daily for "months." Of twenty-four patients so treated, only four showed a drop of 30 mm. or more. However, in some of the other patients he found that the fluctuations of blood pressure seemed to lessen although the level did not drop. Despite this general lack of drop in blood pressure, he found great subjective improvement of the patients. However, subjective improvement in hypertensive patients may be obtained by the simple suggestion inherent in any seriously prescribed therapy [10] because of the psychic nature of many hypertensive symptoms.[11] It is important to contrast the failures of Fineberg and Westphal after long periods of treatment with the successes of others who tried brief periods of treatment and used less critical criteria of drop in blood pressure. It is reasonable to conclude on the basis of the literature that there is little or no clear evidence for the effectiveness of the thiocyanates in small doses.

AUTHOR'S RESULTS WITH THIOCYANATE THERAPY

I began the use of potassium thiocyanate in December, 1928, and continued the drug in different patients until November, 1929. Since then, the apparent thiocyanate effects have been compared not only with the control period before treatment but also with the

* From the Medical Clinic of the Boston Dispensary, Service of Dr. Joseph H. Pratt, and the Division of Research.

1. Pauli, W.: Ueber Ionenwirkungen und ihre therapeutische Verwendung, München. med. Wchnschr. **1**: 153, 1903.
2. Pal, J.: Wien. med. Wchnschr. **54**: 569, 633, 1904.
3. Von Dalmady, Z.: Zur therapeutischen Verwendung der Rhodanverbindungen, Wien. klin. Wchnschr. **25**: 794, 1912.
4. Westphal, K., and Blum, R.: Die Rhodantherapie des genuinen arteriellen Hochdrucks und ihre theoretische Begründung, Deutsches Arch. f. klin. Med. **152**: 331 (Oct.) 1926.
5. O'Hare, J. P., and Hoyt, L. H.: Mistletoe in the Treatment of Hypertension, New England J. Med. **199**: 1207 (Dec. 13) 1928.
6. Palmer, R. S.; Silver, L. S., and White, P. D.: Clinical Use of Potassium Sulphocyanate in Hypertension: Fifty-Nine Cases, New England J. Med. **201**: 709 (Oct. 10) 1929.
7. Ayman, David: The Evaluation of Therapeutic Results in Essential Hypertension: 2. The Interpretation of Blood Pressure Reductions, to be published.
8. Fineberg, M. H.: Potassium Thiocyanate in the Treatment of Patients with Hypertension, J. A. M. A. **94**: 1822 (June 7) 1930.
9. Borg, J. F.: Experiences in Use of Sulphocyanates, Minnesota Med. **13**: 293 (May) 1930.
10. Ayman, David: The Evaluation of Therapeutic Results in Essential Hypertension: 1. The Interpretation of Symptomatic Relief, J. A. M. A. **95**: 246 (July 26) 1930.
11. Ayman, David; and Pratt, J. H.: The Nature of the Symptoms Associated with Essential Hypertension, Arch. Int. Med., to be published.

blood pressure readings during the period from the cessation of treatment up to the present. Sixteen patients have been followed in this manner for an average period of 1.3 years since their thiocyanate therapy was stopped, and ten other patients for shorter periods.

10 years before the present study. In practically all the patients (twenty-five out of twenty-six) there was already clinical evidence of organic vascular disease in the fundus oculi, heart or kidneys. Two cases showed renal damage, but only of slight degree, as evidenced by dilution and concentration tests. Eight of the

TABLE 1.—*Analysis of the Literature of the Thiocyanates with Regard to the Number of Cases Reported, Dosage Used, Degree of Blood Pressure Falls, and the Frequency and Character of the Side Reactions*

Dosage Used	Number of Cases Reported in Reviewed Literature	Number of Patients in Whom Blood Pressure Was Lowered	Degree of Systolic Lowering of Blood Pressure in Millimeters	Number of Days Drug Was Given	Number of Cases with Relief of Symptoms	Number and Character of Untoward Reactions
More than 1 Gm. daily						
Westphal, K., and Blum, R.: Deutsches Arch. f. klin. Med. **152**: 331 (Oct.) 1926	12	9	40-50 average	8-12	"Often"	"Very frequent unpleasant and severe reactions"; 3, bronchopneumonia; 1, laryngitis; 1, angina; 4, "psychic storms"; 3, general weakness of muscles, mild collapse in one; 1, exanthem
Borg, J. F.: Minnesota Med. **13**: 293 (May) 1930	4	4	150; 53; 55; 55	?	?*	4, severe toxic psychoses
Total	16	13				
One Gm. daily						
Westphal, K., and Blum, R.: Deutsches Arch. f. klin. Med. **152**: 331 (Oct.) 1926	38	19 9	30, 40-60 10-20	14-182	?	4, mild fatigue; 1, psychic excitement; 1, psychic depression; 1, transient Quincke's edema; 1, "rhodan exanthem"; 1, "rhodan cold"
Borg, J. F.: Minnesota Med. **13**: 293 (May) 1930	5	?	?	?	?	4, "untoward side effects"
Fineberg, M. H.: J. A. M. A. **94**: 1822 (June 7) 1930	21	12	30 or more	91	Few or none	"Many" had transient numbness and tingling paresthesias in the fingers when the drug was first started; a feeling of weakness often accompanied a sudden drop in blood pressure; "many patients felt better when under sedative treatment rather than under potassium thiocyanate"
Smith, A. G., and Rudolf, R. D.: Canad. M. A. J. **19**: 288 (Sept.) 1928	12	11	20-80	7?	11 moderate	2, weakness and fatigue with drop in blood pressure; 1, nausea with drop in blood pressure; 2, "several" felt drowsy
Nichols, J. B.: Am. J. M. Sc. **170**: 735 (Nov.) 1925	?	?	20, 30, 40 or more	?	?	A considerable portion of the patients experienced disagreeable effects sometimes so marked as to require reduction of dosage or stopping drug; nausea, gastro-intestinal disorders, nervous disturbances
Logefeil, R. C.: Minnesota Med. **12**: 151 (March) 1929	24	21	10-110; 50 average	14+	14	8, nervousness and weakness; 1, weakness and slight diarrhea when drug was given for more than two weeks; 1, weak when blood pressure fell; 1, edema of eyelids; 2, exfoliative dermatitis with fever
Total	100	72				
0.33 Gm. b.i.d.						
Smith, A. G., and Rudolf, R. D.: Canad. M. A. J. **19**: 288 (Sept.) 1928	20	10	?20-30	?	?	4, lassitude
0.11 to 0.13 Gm. t.i.d.						
Borg, J. F.: Minnesota Med **13**: 293 (May) 1930	12	10	30 average	Up to 30	?	
Smith, A. G., and Rudolf, R. D.: Canad. M. A. J. **19**: 288 (Sept.) 1928	40	40	"Results varied considerably"	7-14	40	4, marked weakness; 0, none
Total	52	50				
0.1 Gm. t.i.d.						
Fineberg, M. H.: J. A. M. A. **94**: 1822 (June 7) 1930	13		30 or more	91	0	0, most of the patients said they had felt better while taking bromides or phenobarbital; in a number of patients the drug had a slight laxative action
0.1 Gm. first week t.i.d. 0.1 Gm. second week b.i.d. 0.1 Gm. third week and thereafter t.i.d.						
Westphal, K., and Blum, R.: Deutsches Arch. f. klin. Med. **152**: 331 (Oct.) 1926	25	4 5	30-50 20	"Months"	+	Occasional mild fatigue
Gager, L. T.: J. A. M. A. **90**: 82 (Jan. 14) 1928; Hypertension, Baltimore, 1930, p. 118	75	52	20-60	..	52	Occasional feeling of weakness with fall in blood pressure
Palmer, R. S.: Silver, L. S., and White, P. D.: New England M. J. **201**: 709 (Oct. 10) 1929	59	25	30-40 in 17 cases 40-50 in 3 cases 50+ in 5 cases	21	7 out of 14	Many felt better when not taking drug; occasional feeling of weakness
Total	159	86				

CLINICAL ANALYSIS OF THE PATIENTS REPORTED

In table 2, twenty-six cases of true essential hypertension are being dealt with, the existence of the disease being known by the patients themselves for from 0.6 to 15 years, and recorded in the clinic for from 0.2 to

patients had two separate courses of thiocyanate treatment and one patient had three courses. The time interval between courses in each patient was at least two months, in order to permit the effect of the thiocyanate to disappear. This interval is sufficient, for

Westphal [4] has shown that the blood, which normally contains thiocyanate, is back to its normal concentration of the drug within from four to six weeks after the cessation of therapy. The drug was always given until disturbing toxic symptoms developed, in an effort not to miss its possible hypotensive effect. Thus, it was continually given to twelve patients for from 70 to 109 days, to eleven patients for from 40 to 70 days, to six patients for from 20 to 40 days, and to five patients for less than 20 days. The drug used was manufactured by Merck & Co. In fifteen patients the treatment by thiocyanate was preceded by a control period, during which the patients were given control "treatment" by suggestion in the form of small doses of dilute hydrochloric acid.[10] In the remaining eleven patients there was control observation without control "treatment." Thus, it is seen that (1) in 100 per cent of the patients there was control observation, and in 58 per cent of them control treatment; (2) in most of the cases there was a subsequent long period of continuous treatment with the drug; (3) in a large percentage of the patients there was a long period of observation after total cessation of treatment with thiocyanate. I myself have made all the observations of the blood pressure during this study. The patients were seated in a quiet room, and the readings before, during and at the end of a twenty-minute rest period were all recorded.[12]

RESULTS WITH LARGE DOSAGE

The use of large doses of the drug produced marked drops in blood pressure. When 0.2 Gm. (3 grains) was used four or five times a day, in only two out of fourteen patients did a drop in pressure fail to occur. The amount of decrease in this group varied from 30 to 40 mm. systolic and from 10 to 30 mm. diastolic below the average base level. Such a drop is not ordinarily easy to evaluate, as mentioned at the beginning of this paper, if one has not observed his patients for a long period and thereby established a true base level of blood pressure. However, in long controlled cases, a fall of 30 mm. systolic below the average base level is a large drop. The drops in blood pressure usually

TABLE 2.—*Analysis of Twenty-Six Cases of Essential Hypertension Treated with Potassium Thiocyanate* *

Case†	Age	Known Duration of Hypertension, Years	Heart Enlargement by Orthodiagraph	Electrocardiographic Changes	Changes in Retinal Blood Vessels	Renal Function Impairment	Length of Observation in Clinic Before Treatment, Years	Length of Observation by Author Before Treatment, Days	Length of Control Treatment with Hydrochloric Acid, Days	Length of First Course of Potassium Thiocyanate Treatment, Days	Dose of Potassium Thiocyanate During First Course, Gm.	Time Interval Between First and Second Courses of Potassium Thiocyanate, Days	Length of Second Course of Potassium Thiocyanate Treatment, Days	Dose of Potassium Thiocyanate During Second Course, Gm.	Length of Observation by Author After First Course, Years
1 ♂	51	5.0	+	—	+++	—	1.2	84	21	42	(0.1) t.i.d. (0.1) 4.i.d.	90	7	(0.2) 4.i.d.	1.5
2 ♀	66	5.0	+	+24°	++	—	1.1	30	21	91	(0.1) t.i.d.	61	24	(0.2) 4.i.d.	1.6
3 ♂‡	70	7.0	++	+ 6°	+++	—	0.08	30	14	72	(0.1) t.i.d.	90	14	(0.2) 4.i.d.	1.7
4 ♀	59	2.0	..	..	+++	—	0.8	84	42	86	(0.2) 4.i.d.	60	35	(0.2) 5.i.d.	0.8
5 ♀	47	7.0	+	—	+++	—	6.8	98	13	109	(0.1) t.i.d.	50	81	(0.22) 4.i.d.	1.2
6 ♀	45	6.5	+	+35°	++	—	4.0	210	28	51	(0.1) t.i.d.	200	38	(0.2) 4.i.d.	1.6
7 ♀	54	2.5	+	..	+++	—	0.5	182	42	42	(0.2) t.i.d.	.. 74	114	(16) (0.2) 4.i.d. (6) (0.2) t.i.d. (92) (0.2) b.i.d.	1.5
8 ♀	51	7.1	—	— 4°	++	—	0.4	147	..	5	(0.1) t.i.d.	.. 80	21	(16) (0.2) 4.i.d. (6) (0.2) t.i.d.	1.7
9 ♀	64	8.0	..	—14°	++	—	0.3	21	21	91	(0.1) t.i.d.	..	..	.....	1.6
10 ♀	51	5.0	++	..	+++	—	1.0	25	..	109 (102; 7)	(0.1) t.i.d. (0.4) t.i.d.	..	..	.....	1.2
11 ♀	64	12.0	+	Fibrillation	++	—	10.0	123	..	74	(0.1) t.i.d.	..	..	.....	0.8§
12 ♀	77	6.5	++	+16°	+++	—	2.5	62	14	89	(0.1) t.i.d.	..	..	.....	1.5
13 ♀	60	3.6	—	—	++	—	2.0	182	14	63	(0.1) t.i.d.	..	..	.....	1.7
14 ♂	49	2.3	—	..	++	—	0.4	35	35	86 (47; 39)	(0.1) t.i.d. (0.1) 4.i.d.	..	..	.....	1.5
15 ♀	64	4.5	+	..	+++	—	2.7	120	..	62	(0.1) t.i.d.	..	..	.....	0.5
16 ♂	45	6.0	+	—16°	++	—	0.6	55	..	48 (13; 21; 14)	(0.1) t.i.d. (0.1) 5.i.d. (0.2) t.i.d.	..	..	.....	1.7
17 ♀	64	9.1	—	..	—	—	7.5	189	14	52	(0.1) b.i.d.	..	..	.....	0.3
18 ♀	44	3.0	—	+30°	+++	—	3.0	210	..	45	(0.2) t.i.d.	..	..	.....	1.5
19 ♂	61	15.0	..	+40°	+++	—	0.8	4	..	64	(0.2) t.i.d.	..	..	.....	1.5
20 ♀	53	3.8	..	..	++	—	2.7	168	..	58 (34; 24)	(0.2) t.i.d. (0.2) b.i.d.	..	..	.....	0.2
21 ♀	70	8.0	+++	..	+++	+	7.0	14	..	76 (22; 7; 29; 18)	(0.2) t.i.d. (0.2) b.i.d. (0.2) i.i.d. (0.2) t.i.d.	..	..	.....	1.5
22 ♀	62	5.3	+	—2°	+++	—	4.0	300	77	52 (45; 7)	(0.2) t.i.d. (0.2) 4.i.d.	..	..	.....	1.3
23 ♀	58	0.6	+++	..	+++	—	0.2	65	49	22	(0.2) 4.i.d.	..	..	.....	0.2§
24 ♂	62	4.0	++	..	..	+	0.2	105	..	89 (62; 27)	(0.2) 4.i.d. (0.2) 5.i.d.	..	..	.....	0.08§
25 ♂	64	1.9	+	..	+++	—	0.2	69	69	4	(0.2) 4.i.d.	..	..	.....	0.1
26 ♀	42	2.3	+	..	+++	—	0.4	55	..	12 (9; 3)	(0.2) 5.i.d. (0.2) 4.i.d.	..	..	.....	1.0

* In this table, + indicates slight narrowing of retinal arterioles, slight cardiac enlargement or slight renal damage; ++ indicates moderate narrowing of retinal arterioles or moderate cardiac enlargement; +++ indicates marked narrowing of the arterioles or marked cardiac enlargement; the electrocardiographic changes indicate the degree of axis deviation as determined by Einthoven's method; — indicates within normal limits.
† In this column, ♂ denotes male; ♀, female.
‡ Patient had a third course.
§ Observation terminated by death.

12. Ayman, David: Normal Blood Pressure in Essential Hypertension, J. A. M. A. **94**: 1214 (April 19) 1930.

occurred after two to three weeks of 0.2 Gm. (3 grains) four times daily, and after one to two weeks of 0.2 Gm. (3 grains) five times daily. Of the two cases that did not respond, case 4 had a first course that produced a drop, while a second similar course had no effect, and case 24 had a transient drop that disappeared despite continuation of the drug. In each of the twelve patients who had a sustained fall in blood pressure, marked toxic symptoms developed of such a nature as to preclude further continuation or future repetition of this dose in these same patients with any hope of clinical usefulness (table 3).

Case 7 was the only one in which a fall in blood pressure occurred without toxic effect. In both the large and the moderate dosage groups, as soon as the dosage was decreased to small doses the blood pressure invariably began to rise.

RESULTS WITH SMALL DOSAGE

Finally there is the important group of patients who received the small dosage that is widely recommended: 0.1 Gm. (1½ grains) three times a day. Before the effects of the thiocyanates (or of any therapy) were evaluated, it was especially essential in the small dosage

TABLE 3.—*Incidence and Time of Onset of Individual Untoward Symptoms; Their Relation to the Dosage Used; Relation Between Time of Onset of Symptoms and Time of Lowest Blood Pressure Readings*

Patient	Dosage in Grams	Total Number of Days Potassium Thiocyanate Was Taken	Most Frequent Untoward Symptoms, and Day of Therapy on Which They First Appeared*						Day or Days of Treatment on Which Generally Lowest Systolic Readings Were Found	Day or Days of Treatment on Which Lowest Diastolic Readings Were Found
			Weakness Fatigue	Laziness	Drowsiness	Diarrhea	Nausea	Bad Taste		
3	0.1 t.i.d.	72	40	..	..	..	..	..	35 to 42	35
6*	0.1 t.i.d.	51	..	40	..	..	..	..	35 to 44	44-51
11*	0.1 t.i.d.	74	74	..	74	14	..	..	74	74
12	0.1 t.i.d.	89	..	89	89	..	..	..	40-89	12-89
13	0.1 t.i.d.	63	63	..	..	..	..	63	14	64
1*	0.1 t.i.d. / 0.1 4.i.d.	42	..	..	38	..	..	..	36	22-42
14	0.1 t.i.d. / 0.1 4.i.d.	47 / 39 = 86	..	..	..	..	..	..	72	30-44
16*	0.1 t.i.d. / 0.1 5.i.d. / 0.2 t.i.d.	13 / 21 / 14 = 48	..	..	45	..	..	..	48	48
20*	0.2 t.i.d. / 0.2 6.i.d.	34 / 24 = 58	53	..	..	..	53	..	35-53	35-53
21	0.2 t.i.d. / 0.2 b.i.d. / 0.2 1.i.d. / 0.2 t.i.d.	22 / 7 / 29 / 18 = 76	22	..	..	..	..	..	29 and 64	22 and 64
18	0.2 t.i.d.	45	40	..	..	..	..	..	7-42	7-49
22	0.2 t.i.d. / 0.2 4.i.d.	45 / 7 = 52	..	..	30	..	..	..	40-47	40-47
8*	0.2 4.i.d. / 0.2 t.i.d.	16 / 6 = 22	..	..	..	17	..	..	9-16	9-16
7	0.2 4.i.d. / 0.2 t.i.d. / 0.2 b.i.d.	16 / 6 / 92 = 114	15	19	15	..	..	..	16-88	16-88
23	0.2 4.i.d.	22	16	..	..	16	..	..	22	22
25	0.2 4.i.d.	4	2	..	..	1	3	..	..	..
6*	0.2 4.i.d.	38	16	16	..	..	..	38	21-38	31-38
3	0.2 4.i.d.	14	14	..	..	..	..	..	14	14
2*	0.2 4.i.d.	24	24	24	24	..	..	24	13-24	13-24
1	0.2 4.i.d.	7	3	..	..	..	3	..	5	5
5*	0.2 5.i.d. / 0.2 4.i.d.	16 / 65 = 81	15	15	15	74	74	..	9-30	9-30
4*	0.2 4.i.d. / 0.2 t.i.d. / 0.2 4.i.d. / 0.2 5.i.d.	19 / 21 / 21 / 25 = 86	..	..	..	13	..	..	19	19 and 47
26	0.2 5.i.d. / 0.2 4.i.d.	9 / 3 = 12	6	12	6	9	9	12	4-12	4-12
24	0.2 4.i.d. / 0.2 5.i.d.	62 / 27 = 89	..	..	..	15	..	..	16-29	16-29
4	0.2 5.i.d.	35	..	..	..	..	..	21	21	11
3*	0.2 5.i.d. / 0.2 4.i.d.	14 / 5 = 19	7	..	..	10	..	..	14	14

* Other untoward symptoms: Patients 1 and 2 had conjunctival inflammation; patient 20 had a rash; patient 6 had pruritus during each course of treatment and anorexia and bleached hair during the second course; patients 8 and 5 had abdominal cramps; patients 11 and 3 developed tremors; patients 16, 5 and 4 complained of numbness in upper part of body. One control patient with normal blood pressure developed an exfoliative dermatitis.

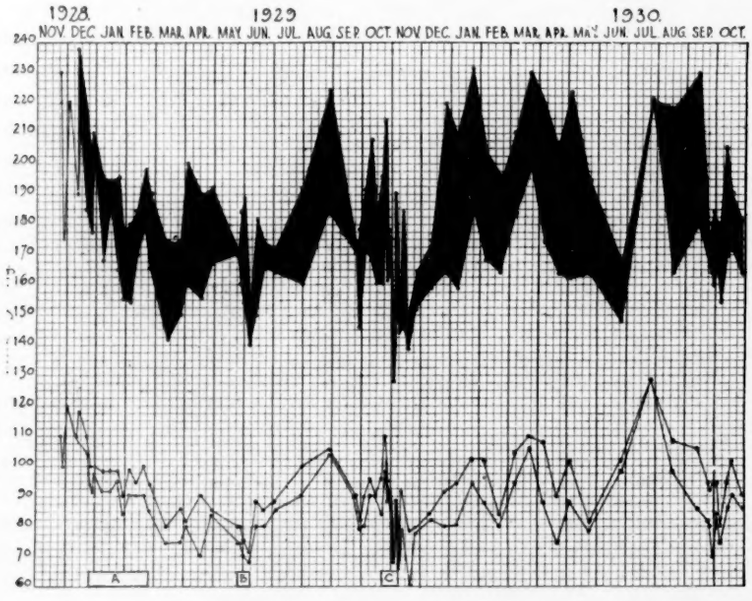
RESULTS WITH MODERATE DOSAGE

A group of six patients was given a moderate-sized dosage of 0.2 Gm. (3 grains) three times a day over periods ranging from twenty-two to sixty-four days. In case 18 there was a drop of 30 mm. in the systolic and 15 mm. in the diastolic pressure, while in cases 7, 20, 21 and 22 there were systolic drops of 20 mm. and diastolic drops of from 0 to 15. In case 16 a fall of 10 mm. systolic and diastolic occurred, while in case 19 there was no effect. Of the five cases that showed a definite drop when compared with the entire control periods, four patients also had definite undesirable reactions.

group to be certain that no important uncontrolled factor was overlooked. I have long felt that in many past studies of therapy in essential hypertension one important matter has not been controlled; namely, the frequency of visits. I have shown [7] that when an untreated hypertensive patient is seen at frequent intervals, e. g., weekly for months, the readings of his blood pressure will usually be at a lower level than when he is seen at wider intervals, e. g., monthly. This is illustrated in the accompanying chart, which at the same time shows the method of control used throughout the present study. The upper two curves represent

the systolic blood pressures, the higher one the readings before rest, the lower one the readings after a rest period, usually of twenty minutes in a quiet room; the lower two curves represent diastolic readings before and after rest. It is especially seen that whereas in January and February, 1929, a drop in blood pressure occurred during the administration of 0.1 Gm. (1½ grains) three times daily, it was possible to get as good a drop in September and October, 1930, simply by seeing the patient at frequent intervals without any therapy; this despite the fact that this was done over a year later when one might expect the disease to be slightly more advanced. Subtracting this last effect in October, 1930, from the effect in February, 1929, it is found, therefore, that 0.1 Gm. three times daily had no real effect in this patient. After the frequency of visits in seven patients in the foregoing manner was controlled, similar negative results were always found in regard to small doses of thiocyanate.

More specifically, thirteen patients received courses of potassium thiocyanate in small doses. They received the drug over periods of from 42 to 109 days (table 2).



Blood pressure readings of H. L. from November, 1928, to November, 1930. The upper black curves represent systolic variations, not only from visit to visit but also at each visit (the latter variation represented by the vertical distance between the two dots representing the same visit). The lower two curves represent the same for the diastolic blood pressure but are left unblacked in order to present the individual visits more clearly. The parts of the curves marked by the areas *A*, *B* and *C* indicate the time during which the thiocyanate was given. During the period *A* the dose given was 0.1 Gm. three times a day; during *B* the dose was 0.2 Gm. four times a day; during *C* the dose was 0.2 Gm. five times a day for fourteen days, followed by 0.2 Gm. four times a day for five days.

In ten of these patients there was no effect of the drug on the blood pressure, yet five of them developed mild toxic symptoms (table 3). In three out of the thirteen there were slight to moderate falls in blood pressure, from 10 to 30 mm. systolic, and from 5 to 20 diastolic. It is significant that the falls of blood pressure in these three cases (6, 11, 13) occurred only after long courses and were accompanied by definite toxic symptoms in each case.

SUMMARY OF BLOOD PRESSURE RESULTS

There was a fall in blood pressure during twenty individual courses of therapy out of a total of thirty-one courses. The blood pressure returned to its original level within four to six weeks after the therapy had been stopped. In nineteen out of the twenty successful cases there were unpleasant distressing toxic symptoms.

THE RELATION BETWEEN THE APPEARANCE OF TOXIC SYMPTOMS AND THE FALL IN BLOOD PRESSURE

It seems necessary to conclude from the foregoing that potassium thiocyanate has a hypotensive effect that is closely associated with a toxic effect. That there is a close, perhaps causative, relation between the hypotensive effect and the toxic reaction is seen in table 3. In this table there has been charted the day of treatment on which the various symptoms developed in the individual patients, and also the day of treatment on which a definite drop in blood pressure occurred in the same patient. It was found that in every case the real fall in blood pressure occurred at the time when the toxic symptoms appeared. The time of onset of hypotensive and of toxic effects both depended on the dosage, the larger doses producing them earlier. In the small doses, the drug had to be given continually, even up to 109 days, before toxic effects and an associated fall in blood pressure occurred. In some patients a mild degree of toxicity appeared without an associated drop in blood pressure.

TOXIC SYMPTOMS

It is important to bear in mind that the toxic symptoms in my patients were as a rule not of a trivial nature but were unpleasant and distressing. In a total of thirty-six courses of the drug there were twenty-six toxic results. The patients usually complain first of a drowsiness, general weakness and a retardation of mental and physical activity. One patient lost her usual acute interest in immaculate housekeeping and was obliged to lie in bed all day; another patient lost her position in a factory because she could no longer feed a machine fast enough. These symptoms of weakness, easy fatigue, laziness and drowsiness were considered extremely unpleasant by the patients, who often objected to second courses of the drug. In some cases there were gastro-intestinal symptoms such as anorexia, nausea, cramps and diarrhea. These gastro-intestinal symptoms usually disappeared within a week after stopping the drug, but the other symptoms remained from two to six weeks before gradually disappearing.

EFFECT OF THIOCYANATES ON HYPERTENSIVE SYMPTOMS

After a careful analysis of the symptoms of the patients before toxic symptoms set in, no definite evidence of specific relief was obtained. Just as many patients were relieved to the same degree by the control treatment as by the thiocyanates, which is in agreement with my previous observations in regard to the relief of many symptoms associated with hypertension.[10]

COMMENT

The results presented show the impracticability of potassium thiocyanate in essential hypertension, at least in patients who already have narrowing of the retinal arterioles, cardiac enlargement or slight renal involvement. A study of the literature indicates that most of the cases in which the drug has been used and in which the state of the arterioles is described have also had clinical arteriolar changes. It is, indeed, not easy to find many patients in the hospital clinic who have undoubted essential hypertension and no evidence of arteriolar changes. The absence of valuable thiocyanate

effects in this study and others reported in the literature does not, therefore, mean that the thiocyanates and other drugs that have been tried may not be of value in the early functional stages of essential hypertension.

CONCLUSIONS

1. There is no clear evidence in the literature to show the clinical value of the thiocyanates in essential hypertension.
2. Potassium thiocyanate has a hypotensive effect which is almost always associated with distressing side reactions.
3. The hypotensive and toxic effects, practically always occurring simultaneously, are produced by large doses given for short periods or small doses given for long periods.
4. In view of the known effects of the much less toxic sedatives such as the bromides, further clinical trial and study of the thiocyanates should be limited to the purely functional, early stages of the disease. Clinically demonstrable arteriolar sclerosis is a contraindication to its use.

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STUDIES IN THROMBO-ANGIITIS OBLITERANS (BUERGER)

VII. THE BASAL METABOLISM *

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It is a matter of common observation that persons who have been heavy smokers gain weight when they stop smoking. Patients with thrombo-angiitis obliterans, all of whom have been smokers, regularly show a marked increase in weight when they stop using tobacco. It seemed plausible that this fact might in some way be related to a fall in the metabolic rate when smoking was discontinued. We therefore investigated the basal metabolism in a large number of patients with thrombo-angiitis obliterans and in a number of men of corresponding ages who were smokers but who were in good health.

MATERIAL AND METHODS

The patients investigated were persons with thrombo-angiitis obliterans drawn without selection from the large group being treated in the special clinic for this disease in the outpatient department of the Mount Sinai Hospital. They represented all stages of the disease and all ages. Some of them were examined while they were still smoking heavily, while others had stopped smoking for varying periods of from one to five years. The normal individuals used for controls were drawn from the staff of the hospital.

All determinations were made in the early morning on a fasting stomach, and following a rest period. The new Benedict-Roth graphic apparatus was used. In most cases, two successive tests were done on different days and the second determination was used. While many more cases were studied, we have selected fifty typical cases of thrombo-angiitis obliterans for presentation. In addition we studied twelve men who were heavy smokers but were in good health, and ten patients who have impaired circulation due to atherosclerosis.

DATA OBTAINED

A consistent variation from normal was found in the cases of thrombo-angiitis obliterans examined. As will be seen from a study of table 1, the basal metabolism is always below normal and the average reading is minus 16.2 per cent. It is also apparent that there is no striking effect produced on the basal metabolism by the cessation of smoking, even though the patients show a marked gain in weight. The average metabolism in the group of patients with thrombo-angiitis obliterans who were still smoking at the time of the test was minus 16.5 per cent. The average in the group who had stopped smoking for a prolonged period was minus 16 per cent.

TABLE 1.—*Basal Metabolism in Fifty Typical Cases of Thrombo-Angiitis Obliterans*

Name	Date	Basal Metabolism	Age	Weight, Pounds	Height, Inches
Not smoking					
M. D.	10/19/29	—14	36	170	64
T. Z.	11/ 9/29	—13	38	179	68
W. N.	11/18/29	—11	51	151	63
S. M.	11/18/29	—23	44	119	63
V. N.	12/ 7/29	—13	37	137	66
L. G.	12/20/29	—21	42	194	65
E. L. J.	12/24/29	—19	50	150	66
N. S.	12/28/29	—12	45	146	66
H. L.	12/30/29	—15	35	159	67
J. S.	1/15/30	—23	34	171	64
J. F.	1/17/30	—19	27	184	66
R. K.	1/18/30	— 9	27	139	66
A. L.	2/26/30	—13	46	171	66
I. S.	8/12/30	—23	42	150	64
D. S.	8/14/30	—16	41	155	69
M. C.	8/15/30	—23	48	162	65
J. H.	8/20/30	—23	45	157	67
H. E.	8/20/30	— 9	44	176	65
H. M.	8/20/30	—15	46	156	65
L. C.	8/21/30	+ 1	41	153	66
W. B.	8/25/30	—16	33	215	74
C. M.	8/29/30	—18	46	169	67
E. M.	8/29/30	—16	38	160	68
C. K.	9/ 4/30	—20	43	151	68
J. W.	9/ 4/30	—11	38	151	68
J. S.	9/ 6/30	—13	38	158	67
D. P.	9/ 8/30	—13	33	149	67
E. S.	9/ 9/30	—15	34	131	68
I. B.	9/ 9/30	—18	48	160	66
R. M.	9/10/30	— 8	36	184	68
L. K.	9/10/30	—17	27	158	67
R. R.	9/10/30	—25	33	191	68
N. G.	9/10/30	—13	37	187	67
J. W.	10/ 2/30	—14	25	113	66
C. W.	10/ 5/30	—16	29	137	69
Smoking					
L. F.	11/25/29	—24	33	148	65
B. B.	12/ 7/29	—13	32	134	68
A. G.	12/14/29	—10	46	136	68
R. S.	2/12/30	—13	38	157	64
H. Z.	2/12/30	—20	38	114	67
A. R.	4/ 2/30	—14	40	151	62
I. P.	7/11/30	—17	40	128	66
D. S.	7/28/30	—15	28	136	66
M. F.	7/28/30	—13	23	143	65
A. B.	8/18/30	—21	37	165	71
H. G.	8/18/30	—15	34	148	66
D. L.	8/21/30	—21	40	115	63
S. A.	9/ 9/30	—23	33	140	67
A. K.	9/13/30	—12	40	127	64
R. K.	10/ 6/30	—17	39	170	72

Average: minus 16.2 per cent

The group of normal men who were heavy smokers show a similar consistent basal metabolism below normal (table 2). The average reading is minus 15.1 per cent. Although the number of cases examined is not large, the regularity with which a low metabolism was obtained is significant. Further study of this point is being made. Two of this group were repeatedly examined after an experimental cessation of the use of tobacco, but no striking change in the metabolism was obtained, although these men gained weight.

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* From the outpatient department of the Mount Sinai Hospital.

* This work was aided by a grant from the Samuel Kellar Jacobs Research Fund for Thrombo-Angiitis Obliterans.

The basal metabolism in women who are heavy smokers is also being studied and will be reported later.

The patients with circulatory impairment due to atherosclerosis show a basal metabolism that is normal or slightly above normal. The average reading is plus 9 per cent (table 3).

Determinations of basal metabolism done on normal persons, with the new Benedict-Roth apparatus and with the same precautions taken against error, gives a normal range between minus 10 and plus 10 per cent.

COMMENT

In starting this investigation, we fully expected that our thin patients with thrombo-angiitis obliterans, saturated with nicotine, would show a metabolism above normal. We anticipated that with cessation of smoking and a gain in weight the basal metabolism would tend to fall. We were surprised to find the metabolic rate to be minus 20 in thin individuals who were smoking heavily, and this was true both in the patients with thrombo-angiitis obliterans and in men who were in perfect health. The appearance of patients who have thrombo-angiitis obliterans and who have stopped smoking suggest a hypothyroid condition. Most of these men are overweight and tend to become obese unless they restrict carbohydrates in their diet. However, we have seen no frank instance of myxedema in a case of thrombo-angiitis obliterans.

TABLE 2.—*Basal Metabolism in Twelve Healthy Male Smokers*

Name	Date	Basal Metabolism	Age	Weight, Pounds	Height, Inches
J. E.	8/12/30	−17	28	148	68
Dr. F.	12/ 1/29	−13	27	142	71
I. M.	2/ 9/30	−11	36	140	68
V. V.	3/13/30	−15	36	159	67
Dr. K.	6/19/30	−21	29	149	68
M. U.	7/ 1/30	−17	24	148	68
Dr. S.	7/ 8/30	−13	30	155	68
W. G. H.	8/12/30	−15	28	187	72
Mr. S.	8/20/30	−13	40	201	72
Dr. D.	8/21/30	−13	25	166	73
Dr. G.	8/27/30	−12	28	169	68
Dr. S. G.	8/28/30	−21	30	137	71

Average: minus 15.1 per cent

TABLE 3.—*Basal Metabolism in Ten Cases of Impaired Circulation Due to Atherosclerosis*

Name	Date	Basal Metabolism	Age	Weight, Pounds	Height, Inches
S. R.	8/12/30	− 5	59	123	66
L. F.	8/13/30	+ 9	59	124	63
D. S.	8/22/30	− 8	67	169	65
I. G.	9/15/30	+ 9	74	153	65
S. R.	9/16/30	+ 8	59	167	63
M. T.	9/25/30	+13	57	126	64
J. P. S.	9/25/30	+12	74	152	63
R. G.	9/25/30	0	71	177	67
A. F.	10/ 6/30	+12	63	136	63
S. K.	8/25/30	+12	68	122	66

Average: plus 9 per cent

SUMMARY

A study of the basal metabolism was made in fifty cases of thrombo-angiitis obliterans, twelve men who were heavy smokers, and ten persons with circulatory impairment due to atherosclerosis.

An average reading of minus 16.2 per cent was obtained in the patients with thrombo-angiitis obliterans.

An average of minus 15.1 per cent was obtained in male smokers.

The atherosclerotic group showed a metabolism that was normal or slightly above normal. The average reading was plus 9 per cent.

CONCLUSIONS

The basal metabolism in persons with thrombo-angiitis obliterans is below normal.

The basal metabolism in male smokers is also below normal.

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TREATMENT OF DEMENTIA PARALYTICA

COMPARATIVE THERAPEUTIC RESULTS WITH MALARIA, RAT-BITE FEVER AND DIATHERMY *

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It is difficult to ascertain the comparative merits of various forms of treatment of dementia paralytica. Each case presents an individual problem and, though certain groupings have been formulated in an attempted psychiatric classification, these groupings are, at best, only loosely knit entities. Experience obtained in the treatment of patients suffering from this disease has accentuated the possibility of producing remissions in certain types, while other types respond poorly to treatment. It is generally recognized that patients having the expansive type of dementia paralytica react well to treatment, that demented forms respond less certainly, and that very deteriorated, as well as depressed forms, hardly ever respond to any therapy.

Fifty cases selected at random from the voluminous material at the Elgin State Hospital were treated with hyperpyrexia produced by diathermy according to the method outlined by Neymann and Osborne.[1] Chance gave us eleven expansive, four depressed, twenty-one demented and fourteen deteriorated cases. This group can be divided into two subgroupings: twenty-seven cases, or 54 per cent, with a duration of from one to five years, and twenty-three cases, or 46 per cent, with a duration of less than a year. Obviously the entire group does not consist of especially good risks from the therapeutic standpoint. It is the average material found in a state hospital. About 20 per cent of the old cases had been treated with malaria and tryparsamide without appreciable results, such treatment having been instituted about three years ago. The material in the malaria group was more selective. We chose 50 cases from a total number of 170 at our disposal. It was our plan to make these three groups as comparable as possible. We therefore selected these fifty cases not on the basis of therapeutic results but rather with the idea of maintaining the same relative ratio of psychic types as in the diathermy group. This manner of choice did not appreciably alter the percentage results obtained in the whole group of 170 cases. The sodoku group was selected in the same manner from a material of seventy-two treated cases. The therapeutic results of this series

* Read before the Central Neuropsychiatric Society in Sept. 26, 1930.

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1. Neymann, C. A., and Osborne, S. L.: The Treatment of Dementia Paralytica with Hyperpyrexia Produced by Diathermy, J. A. M. A. 96:7 (Jan. 3) 1931.

have been published.[2] Even with this effort at selectivity it is, of course, impossible to make the three groups absolutely clinically comparable. If we have erred at all we took the precaution of erring toward the disadvantage of the diathermy group.

Before we proceed to compare the results obtained with these three therapeutic methods, we wish to note that the diathermy cases did not receive the maximum amount of treatment. The total number of treatments given any patient was twelve. The average time above 103.5 F. ranged between one and one-half and two hours for each treatment. This is by far not enough. We condone this. The early work was purely experimental and we were limited by external circumstances. Consequently, this group has a much lower remission rate than a former group reported by Neymann and Osborne,[1] in which the remission rate averaged 65 per cent. The difference in clinical material in these two groups must also be taken into consideration. The three groups now presented are, however, fairly comparable, as all of them represent the average material of a state hospital. The results obtained are best shown by the accompanying tables.

The most interesting factor in these tables is the death rate connected directly or indirectly with the treatment. It was 18 per cent for malaria, 10 per cent for sodoku, and nil for diathermy. Our total experience embraces 110 cases treated by various investigators at the Cook County Psychopathic Hospital, at the Elgin State Hospital, and in private sanatoriums. Thus far not a single death has resulted, directly or indirectly, from diathermy treatment. Six patients of the total

TABLE 1.—*Clinical Results Obtained by Treatment with Sodoku*

Type	Number of Cases	Remission; Returned to Former Occupation	Improved	Arrested	Non-arrested	Died as Result of Treatment
Expansive	12	2	2	3	3	2
Depressed	3	0	1	1	1	0
Demented	20	2	6	4	6	2
Very demented	15	0	2	4	8	1
Total	50	4	11	12	18	5
Percentage		8	22	24	36	10

TABLE 2.—*Clinical Results Obtained by Treatment with Malaria*

Type	Number of Cases	Remission; Returned to Former Occupation	Improved	Arrested	Non-arrested	Died as Result of Treatment
Expansive	13	8	3	1	0	1
Depressed	4	0	0	2	1	1
Demented	19	3	7	6	2	1
Very demented	14	0	1	4	3	6
Total	50	11	11	13	6	9
Percentage		22	22	26	12	18

series of 110 died as the result of the progressive course of their disease, weeks and months after treatment had ceased.

Remissions with sodoku are short lived; i. e., from one to two months. The results obtained with malaria are good. Many patients have been in remission for three years. The average time of observation with diathermy is one year. No patient in remission has thus far been institutionalized a second time. In our experience sodoku gives 8 per cent remissions, malaria 22 per cent, and diathermy 24 per cent. Our criterion for the basis of a remission is the fact that the patient developed insight and was able to leave the institution and pursue a gainful occupation. It is probable that the remission rate with diathermy can be increased even with the average material found in a state hospital,

TABLE 3.—*Clinical Results Obtained by Treatment with Diathermy*

Type	Number of Cases	Remission; Returned to Former Occupation	Improved	Arrested	Non-arrested	Died as Result of Treatment
Expansive	11	5	1	5	0	0
Depressed	4	2	2	0	0	0
Demented	21	4	7	6	4	0
Very demented	14	1	3	4	6	0
Total	50	12	13	15	10	0
Percentage	100	24	26	30	20	0

TABLE 4.—*Comparative Results of the Treatment of Dementia Paralytica with Sodoku, Malaria and Diathermy*

Treatment	Remission; Returned to Former Occupation	Improved	Arrested	Non-arrested	Died as Result of Treatment
Sodoku	8%	22%	24%	36%	10%
Malaria	22	22	26	12	18
Diathermy	24	26	30	20	0

provided more intensive treatment is given. Many cases showed improvement after only a few treatments. One case, a recent dementia, went into a full remission after three treatments. Most of them, however, began to show improvement only after the eighth or tenth treatment. This would indicate that more than twelve treatments should have been given. The rate of improvement was 26 per cent for diathermy, 22 per cent for malaria, and 22 per cent for sodoku. Some of the improved patients remained in the institution and were satisfactorily employed in some industrial department; others returned home but had to adjust themselves to a comparatively lower economic level. In the diathermy group about 35 per cent of the cases under one year's duration went into remission, compared with 15 per cent of the cases of longer duration. Of the total of improved cases, 65 per cent were recent cases and 35 per cent were old. A number of the latter cases had been previously treated by other methods without results. Only one of the seven depressed patients treated with either malaria or sodoku showed improvement, while, of the four depressed patients treated with diathermy, two went into a remission and two had improved to a point at which both were paroled from the institution. Malaria, sodoku or any other method of treatment usually has failed to produce any appreciable change in this type of dementia paralytica.

The serologic results in all these methods do not coincide with the remission rate and the rate of improvement. Some demented cases improved serologically but not clinically. Other cases went into a clinical remission but showed no serologic changes; a few even showed more outspoken blood and spinal fluid changes. We were not able with the meningeal permeability test of Malamud, Fuchs and Malamud[3] to prognosticate clinical results in the diathermy group. The perme-

2. Hershfield, A. S.; Koenig, M. T.; Kibler, O. A.; Colby, Selma; Schmid, O. W., and Saunders, Anny M.: Sodoku Treatment in Paresis, J. A. M. A. **92**: 772-773 (March 9) 1929.

3. Malamud, William; Fuchs, D. M., and Malamud, Nathan: Barrier Between Blood and the Cerebrospinal Fluid, Arch. Neurol. & Psychiat. **20**: 780-798 (Oct.) 1928.

ability increased for the first two months and then approached the normal level of 3.0. In two cases the permeability was lowered. Both of these patients gradually became worse. However, not all patients that showed increased permeability improved or recovered. Therefore, we conclude that this test may be of some value in prognosticating a bad outcome but is not necessarily a sure sign of approaching clinical improvement.

In this comparison of the three modes of treatment, not only the results but also other factors must be taken into consideration. The contraindications for either one of the infective modes of treatment accentuate the advantages of diathermy. The complications of administering malarial therapy are too well known to merit further discussion. The course of sodoku, or rat-bite fever, is accompanied by severe pains along the nerve trunks resembling tabetic crises, as well as considerable muscular pain on slightest motion. Many grave effects of the disease are apt to develop, such as generalized adenopathy, arthritides and marasmic conditions, which make the patient susceptible to any intercurrent infection. We have become convinced that it is much more difficult to arrest this disease than is generally accepted. One injection of 0.3 Gm. of neoarsphenamine does not necessarily terminate the fever or prevent sequelae; often five or six injections are necessary. The complications of diathermy treatment are absolutely nil, provided the correct electrodes are used and the correct technic is applied. If proper electrodes are not used, burns may result. Such burns are rather annoying but have never proved serious. If they do occur it is because of faulty technic. Clinical experience has shown that it is quite dangerous to treat marasmic, old or debilitated patients with malaria or sodoku. Forty-five years would seem to be the upper age limit for a safe application of these forms of therapy. With diathermy, however, we have treated aged patients having arteriosclerosis, diabetes and advanced organic heart disease. Treatment was discontinued in one case complicated by syphilitic aortitis.

In our opinion the hyperpyrexia itself is the most important therapeutic factor. Two elements must be considered—the height of the fever and its duration. A rectal temperature between 103.5 and 105.5 F. has proved the most favorable and we believe that the clinical value of fever therapy depends on the number of hours a patient's temperature remains within these limits. Therefore, an optimum method would be one that gives good control of both elements. In malaria or sodoku, the height and the duration of the temperature cannot be regulated. The number of paroxysms the patient is allowed to have ranges from three to five in sodoku and from ten to fifteen in malaria, any larger number of paroxysms being contraindicated because of the patient's reaction to prolonged infection. With diathermy, however, as has been previously reported by one of us, as many as fifty treatments were given to several patients. Each paroxysm in malaria produces approximately from three to four hours of temperature above 103.5 F. Here, of course, wide individual variations exist. Often the maximum temperature reaches undesirable heights. Paroxysms in sodoku are even more apt to vary. In some cases the fever never reaches the level of 102 F. The duration of a paroxysm varies from two hours to three days. Diathermy, with its purely mechanical control, offers a method whereby the height of the temperature, as well as the duration of each period of hyperpyrexia, can be prescribed and administered with an exactness approaching that of a pharmaceutic prescription, thus making it almost an ideal method.

The application of malaria and of sodoku requires a culture of these diseases maintained in vivo. Diathermy offers a method that is easily available. It does not give any dangerous reactions, has no death rate, can be applied with the exactness of a medical dosage, and does not necessarily demand the hospitalization of the patient except on the days of treatment.

CONCLUSIONS

1. A comparative study of therapeutic results obtained in a series of clinically similar cases of dementia paralytica treated with malaria, sodoku, and diathermy has been made.
2. The remission and improvement rate of diathermy exceeds that of malaria and sodoku.
3. The death rate with the diathermy method is nil.
4. Diathermy offers a hope of remission in types of dementia paralytica which seemed to be unamenable to treatment of any kind.
5. The serologic changes produced by any form of hyperpyrexia do not coincide with the clinical changes.
6. Diathermy permits the treatment of cases in which the use of malaria or sodoku would be contraindicated.
7. The use of this method is easily accessible to any physician, trained in the technic.
8. In many cases the treatment can be given ambulantly.

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"AVERTIN" ANESTHESIA IN NEUROLOGIC SURGERY *

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Ether, administered by inhalation, has three serious liabilities in intracranial surgery. It causes (1) swelling of the brain, (2) postoperative vomiting and (3) pneumonia. Together, these three effects are alone responsible for quite a high percentage of the mortality associated with operations on the brain.

Doubtless much of the swelling of the brain results from venous cerebral congestion, incident to respiratory embarrassment during induction, but the direct irritating effects of the ether on the brain is also probably an important factor. Although the degree of swelling of the brain is variable, it is always present and is always an added hazard. Occasionally it may be so extreme as to resemble the pressure of an intracranial tumor and prevent closure of the dura and replacement of the bone flap. For operations beneath the surface of the brain, such as for hypophyseal, pineal, cerebellopontile, olfactory groove and other tumors, sufficient exposure for careful extirpation of the growth is attainable only by making a much larger bony defect or by sacrificing contiguous brain tissue. Cerebral swelling not only always makes the operative procedure in varying degree more difficult and more dangerous, but it may even prevent its successful conclusion.

Postoperative vomiting has been one of the most serious causes of mortality in cranial surgery. Although

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the operative field is always dry before closure is begun, the straining that occurs with vomiting on awaking from the anesthetic produces venous stasis and reopens vessels that otherwise would remain sealed. Cerebral hemorrhage of varying grade is the result. If the veins are large or if there is a free space or open ventricle into which hemorrhage may continue unrestrained, the size of the hematoma may cause death; if of lesser grade, convalescence is prolonged and perhaps the after-result is less perfect.

Postoperative pneumonia, as a sequel of ether anesthesia, is by no means an infrequent occurrence, especially in long cranial operations and, when present, the percentage of recoveries is small. In studying the cases of postoperative pneumonia after cranial operations I have been impressed with two facts: (1) Cerebellar operations are practically devoid of this complication, and (2) after cerebral operations, the pneumonia almost without exception is on the side that is dependent (the patient is always turned partly to one side). It is evident, therefore, that the position assumed by the patient during the operation plays an important rôle in the development of pneumonia and that gravity is an essential factor in determining the side involved. There can be little doubt that aspiration into the dependent bronchi is responsible for many cases, for a plug of mucus is frequently found occluding the affected bronchi; and in some instances, evidences of pneumonia—rapid respirations, tachycardia and labored breathing—are present before the operation is concluded. There is also reason to believe that, when administered by the drop method, ether may not vaporize and may gravitate in liquid form into the dependent part of the lung and cause pneumonia without the development of an infarct from aspiration. Careful search for plugs in the bronchi is frequently negative. Unquestionably the incidence of pneumonia bears a direct relationship to the skill of the anesthetist, both during the period of induction and throughout the operation; but even with the best anesthetists, pneumonia cannot be eliminated. Doubtless one of the important reasons (in addition to posture) for the absence of pneumonia in cerebellar operations is the administration of ether in vapor form by means of a pump. The direct ingress of liquid ether into the nasopharynx and subsequently into the lungs is thereby avoided. There is, of course, no reason why vaporized ether should not be similarly used in cerebral cases and thus reduce the incidence of pneumonia.

To avoid the foregoing dangers, two substitutes for ether by inhalation have been quite generally adopted in cranial surgery in recent years—local anesthesia and rectal ether. The former eliminates all the risks of ether. But, at best, it is a dreadful ordeal for a patient to endure for two, three or even more hours necessary to complete the operation; and only too frequently the exhausted patient and operator as well are only too anxious to have recourse to general anesthesia. Rectal ether is a great advance over ether by inhalation, and in large part, but by no means entirely, avoids all three of the major risks of the latter.

During the past year I have almost exclusively used "Avertin" anesthesia, given rectally, for all major operations on the brain and spinal cord. After a cautious beginning because of the adverse reports from Germany, where many serious results followed the pioneer efforts, it was soon learned that not only were all the liabilities of ether entirely eliminated but every advantage of local anesthesia was also obtained. In other words, there has never been an instance of postoperative pneumonia and on very few occasions has there been postoperative nausea or vomiting. During this period, in which upward of 250 major cranial operations of every type have been performed, there has been no mortality due to the anesthetic, no instance of postoperative pneumonia, and no deleterious effect either immediate or remote.

Owing to the entire absence of swelling of the brain it has been possible to modify greatly the magnitude of the cranial exposure through which certain tumors of the brain are removed. This is notably true for extirpation of hypophyseal tumors; the size of the bony defect is reduced about one half and without sacrificing the room that is so important for exposing and removing the tumor. Not only is the hypophyseal operation easier of performance, but also the frequent injury to the rolandic area with resulting convulsions and hemiplegia following the larger cerebral exposure is always avoided. Moreover, the danger of extradural hemorrhage, so common with the more extensive operation, is eliminated.

In the approach to all intracranial tumors the same benefit, in perhaps a lesser degree, obtains. It is known beforehand that an extra allowance of bony defect will not be required to compensate for an increased volume of brain due to the effects of the anesthetic. In no procedure has "Avertin" been of such paramount importance as in my cerebellar approach for partial section of the sensory root in trigeminal tic douloureux. The anesthetic has made it a far simpler operation because the absence of swelling of the cerebellum uniformly provides adequate room. The trigeminal operation and others to a lesser degree are greatly facilitated by the perfectly smooth and even respirations—almost a perfect sleep—that follows "Avertin" anesthesia. Under ether, the respirations may be promptly stimulated by a new draft of ether vapor striking the nasopharynx; or the depth and rapidity of the respirations vary with the degree of anesthesia. Irregular respirations, particularly with straining, seriously deter the operator in the one brief moment when perfect vision and touch are required to section partially the sensory root.

The complete removal of cerebellopontile tumors, among the most tedious, difficult and dangerous operations and requiring the most painstaking care at every step, is especially facilitated and made safer because of the smooth regular respirations and the absence of cerebellar edema.

From the patient's point of view, "Avertin" anesthesia is almost ideal. Within five or ten minutes after its introduction by rectum, the patient is in a sound, peaceful and seemingly natural sleep. There has not been the slightest unpleasant sensation; there has scarcely been a movement of any part of the body. Moreover, the patient awakens gradually and rarely with any nausea or vomiting. The duration of loss of memory is several hours, frequently much of the day of the operation, thus tiding over the most uncomfortable postoperative period. Nervous patients are frequently given "Avertin" in the room and are back again when awakening. Owing to the long duration of the anesthetic effects, all necessary shaving of the head may be done after the administration of the anesthetic. It is thus possible for the patient to have no memories of the operating room. How far these points of finesse

are advisable depends on the probable reactions of the individual patient, but they are possible without additional risk. In no instance has there been any rectal discomfort from the "Avertin."

"Avertin" is by no means a fool-proof anesthetic, but it is perfectly safe if used with good judgment. The dangers have been fully enumerated by a number of German surgeons who pioneered in its use.[1] But there can be no doubt that their mortality rate has been due to overdosage, which in turn has been due to the effort to induce anesthesia with "Avertin" unsupported. This is neither necessary nor advisable. The susceptibility of different individuals to the effect of "Avertin" varies too much to produce maximum anesthesia safely by "Avertin" alone. And, once given, the "Avertin" is rapidly absorbed and beyond control. To obtain the best results with safety, an average dose should be given and any remaining deficit in the anesthesia may be overcome by supplementing a local anesthetic, ether by inhalation or nitrous oxide. The amount of supplementary anesthesia, if necessary, is very small and does not change the basic character of the perfect anesthesia. For these reasons it may perhaps be preferable to look on "Avertin" as a basal anesthetic; but since the anesthesia retains unchanged the full character and effects of the "Avertin," this is a question of academic rather than practical interest. A safe dose of "Avertin" for a normal healthy individual is from 90 to 95 mg. per kilogram of body weight. Rarely is a greater dose given and never more than 100 mg. per kilogram. Smaller doses are given when the general condition of the patient is less than normal. For an ill nourished individual, a dose as low as 50 or 60 mg. per kilogram may be adequate for complete anesthetization. Hence it is clear that each patient must be estimated individually.

I have found no conditions that contraindicate "Avertin" when a general anesthetic of fairly long duration is needed. Pulmonary lesions, chronic nephritis and hypertension are apparently not contraindications. I have given "Avertin" for patients up to the eightieth year when ether would have been hazardous. In young children (under the age of 8 or 10) I have used "Avertin" more sparingly, still preferring ether because the induction period is short and the total amount of ether required is small. However, it seems probable that, with the increasing experience with the dosage in children, "Avertin" may in large part take the place of ether after the age of 3 or 4 years.

The only effect of "Avertin" that might be considered adverse is a drop in blood pressure, coming on within the first half hour and usually within fifteen minutes. This change may indeed be quite profound. In hypertensive cases a drop of 100 mg. of mercury has been observed. But the patient's general condition continues unchanged, the color is good and breathing full and easy; and within a short time the blood pressure has spontaneously returned to the previous normal level and remains so during the remainder of the operation. The drop in blood pressure is therefore of no practical concern. It is, in fact, no longer considered necessary to support the blood pressure with epinephrine, which may or may not be effective. Before beginning the use of "Avertin," it was feared that the depressing effect on the blood pressure—the one best guide of the patient's condition and to the time at which operative efforts must be discontinued—might again develop and shorten the period of safety of the operation. Not only was this suspicion unfounded, for a secondary depression does not occur, but the actual period of operative safety is, I think, actually longer than with ether.

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1. Schwalbe, J.: Der Gegenwörtige Stand der Avertinnarkose, Deutsche med. Wchnschr. **53**: 2064 (Dec. 2) 1927; **54**: 558 (April 6) 1928.

THE TREATMENT OF TRICHOMONAS VAGINALIS VAGINITIS *

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In 1896 Dock and also N. S. Davis each reported that he found *Trichomonas vaginalis* in the vagina of one woman.[1] However, the first clinical paper in American literature on the treatment of the vaginal discharge associated with *Trichomonas vaginalis* was presented by De Lee[2] in 1920. The second article I[3] read before the Chicago Gynecological Society, Feb. 18, 1928, and it appeared in the *American Journal of Obstetrics and Gynecology* the same year. The large number of inquiries that followed indicated that numerous physicians, including many specialists in obstetrics and gynecology, had not known of the existence of a vaginal discharge associated with *Trichomonas vaginalis*. During the last two years much interest has developed and papers have appeared by Davis and Colwell,[4] Davis,[5] Gustafson,[6] Mathieu,[7] Furniss[8] and Kleegman.[9] Davis and Colwell reported important experimental work, whereas the other papers were essentially clinical.

There are still many gynecologists who have not seen a case of *Trichomonas vaginalis* vaginitis, the chief reason being that they have not properly looked for the associated organism. A complete description of the characteristics of *Trichomonas vaginalis*, the method of detecting it and the clinical course associated with it may be found in my previous paper.[3] This parasite, which is usually pyriform or spindle-shaped, is larger than a polymorphonuclear leukocyte but smaller than an epithelial cell. The way to detect and study the organism is by the simplest form of microscopic examination; namely, an examination of a drop of fresh secretion obtained from the vagina. For those not familiar with this protozoon, it is best to add a drop of physiologic solution of sodium chloride to the drop of vaginal secretion before the microscopic examination is made. Because of their constant motility, the organisms may easily be seen with the ordinary high dry power lenses. *Trichomonas vaginalis* is frequently found associated with other organisms, especially thrush, but its association with gonococci is unusual.

Trichomonas vaginalis may be found in the vagina of a large number of women, pregnant as well as nonpregnant, but it does not always produce symptoms. I

* Read before the Central Association of Obstetricians and Gynecologists, Excelsior Springs, Mo., Oct. 11, 1930.

1. Dock, George: Am. J. M. Sc. **111**: 1, 1896. Davis, N. S.: Chicago M. Rec. **10-11**: 238, 1896.
2. De Lee, J. B.: Illinois M. J. **38**: 186 (March) 1920.
3. Greenhill, J. P.: Am. J. Obst. & Gynec. **16**: 870 (Dec.) 1928.
4. Davis, C. H., and Colwell, Charlotte: Trichomonas Vaginalis Donné, J. A. M. A. **92**: 306 (Jan. 26) 1929.
5. Davis, C. H.: Am. J. Obst. & Gynec. **18**: 196 (Aug.) 575 (Oct.) 1929.
6. Gustafson, G. W.: J. Indiana M. A. **23**: 81, 1930.
7. Mathieu, Albert: Northwest Med. **29**: 15 (Jan.) 1930.
8. Furniss, H. D.: Am. J. Obst. & Gynec. **20**: 93 (July) 1930.
9. Kleegman, Sophia: Surg. Gynec. Obst. **51**: 552 (Oct.) 1930.

have found the organism in virgins and in women who have passed the menopause. My previous paper and the present one are concerned only with those cases in which a profuse, troublesome, vaginal discharge is associated with this organism. In the typical case, the vaginal mucosa presents the picture of an inflammatory condition; hence the term vaginitis. It is not certain that the trichomonas is the entire, or even the partial, cause of this condition. There is a possibility that this organism multiplies rapidly on a vaginal mucosa which is damaged by some other causative agent. For this reason I have used the term "associated with" rather than "due to." However, the question of the pathogenicity of *Trichomonas vaginalis* is more important academically than it is clinically. Even if this organism is not pathogenic but grows and multiplies rapidly because other organisms or conditions make the vagina a favorable medium for it, clinical experience has shown that if the trichomonas organisms are removed by one form of treatment or another, the patient's symptoms disappear in the majority of cases.

The source of these parasites is still an unsettled question. Some authorities believe the flagellate comes from the rectum and gains access to the vagina, whereas others maintain that the intestinal form of the trichomonas is a different organism from that found in the vagina. It is unusual to find the trichomonas organisms in the stools of patients who have *Trichomonas vaginalis* vaginitis. When some of the discharge is taken from the vagina of a woman who has *Trichomonas vaginalis* vaginitis and it is transplanted into the healthy vagina of another woman, a vaginitis does not occur in the latter. Hence it is hardly likely

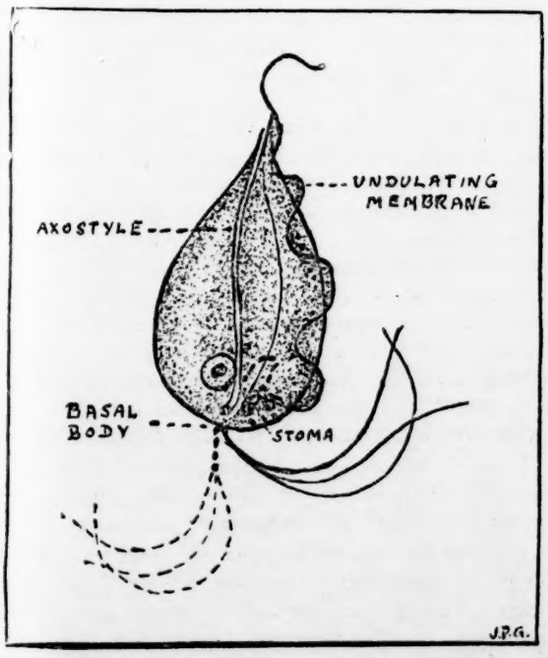


Fig. 1.—Essential structures of Trichomonas vaginalis. (Modified from Rodenwaldt.)

that women contract this form of leukorrhea from one another.

The clinical picture associated with this organism is limited to the vagina and does not include the cervix because the trichomonas can seldom be found above the external os. The vaginal portion of the cervix frequently shows blotchy areas which Kleegman [9] recently called erosions. These areas are, however, not true erosions but are most likely localized areas of hyperemia similar to those frequently seen in the vaginal mucosa.

Many pregnant women have *Trichomonas vaginalis* vaginitis, and it is the belief of some foreign investigators that these women have a much greater tendency toward a febrile puerperium than women without this condition. I have not found this to be true, but this

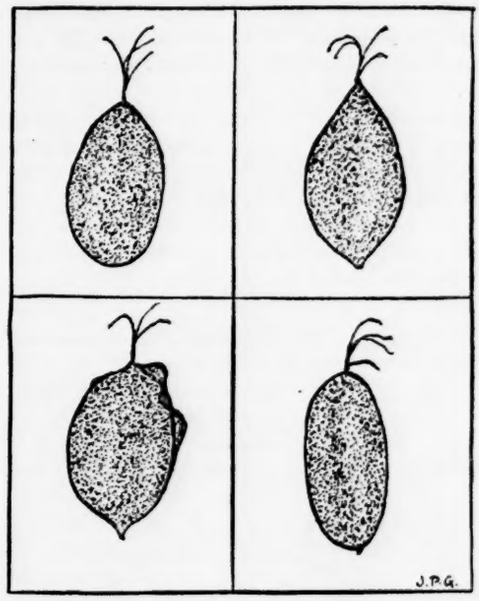


Fig. 2.—Varieties of Trichomonas vaginalis. One shows undulating membrane.

may be due to the fact that my patients were treated intensively during their pregnancy. I have seen no bad effects from treating patients during gestation. It is best, however, to avoid vaginal manipulation as much as possible in these patients during labor. In some cases there is a spontaneous disappearance of the trichomonas discharge immediately after labor, but in many of these there is a return of the discharge a few weeks later.

TREATMENT

While this type of vaginitis can readily be relieved by local treatment, it is frequently difficult to cure it. A large proportion of women have recurrences either early or late, and, because of this, many recommendations have recently been made concerning the treatment. Davis [5] suggests the use of compound solution of cresol or green soap, followed by antiseptic powders for some cases, and mercurochrome-220 soluble and glycerin for others; Furniss [8] praises a 1:4,000 solution of mercuric chloride used as a douche; Cary [10] favors 2 per cent silver nitrate; Kleegman [9] and Holden [11] apply mercurochrome and Lassar's paste; Gustafson [6] uses sodium bicarbonate douches and glycerin-soda tampons, and Mathieu [7] obtained good results with the treatment I outlined in my previous paper, except that he substituted hexylresorcinol for the methylene blue (methylthionine chloride U. S. P.).

During the last two and a half years, because of the recommendations made by others, I have tried out some of the aforementioned suggestions, as well as others. I have, however, returned to my own form of treatment, with slight modifications, because in my hands this therapy has yielded the best results during the last eight years. The chief deviation from my previous treatment

10. Cary, W. H., in discussion on Furniss (footnote 8).
11. Holden, F. C., in discussion on Furniss (footnote 8).

is the omission of methylene blue and the substitution of hexylresorcinol. The latter was substituted not only because of its well known antiseptic properties but also because Ratcliffe [12] showed that four types of resorcinols, when fed to rats which harbored trichomonas in their intestines, produced a rapid change in the intestinal flora, so that one type of *Trichomonas* (*muris*) disappeared entirely and another type (*parva*) was reduced to 10 per cent of its original number. Ratcliffe mentions that a small number of human infections treated with N-heptyl resorcinol have shown excellent results. Since many protozoologists believe that *Trichomonas vaginalis* and *Trichomonas intestinalis* are identical, I thought it advisable to use a resorcinol in the treatment of *Trichomonas vaginalis* vaginitis. By watching the effect of hexylresorcinol on trichomonas under the microscope, I, like Mathieu, found that the motility of the organisms ceased immediately after hexylresorcinol was added to the drop containing the trichomonas.

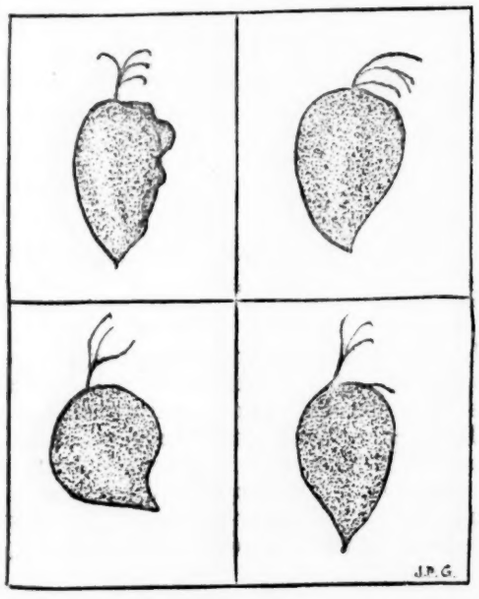


Fig. 3.—Other forms of Trichomonas vaginalis.

The treatment that I use at present is as follows: The vagina is thoroughly scrubbed with gauze or cotton saturated with tincture of green soap (liniment of soft soap U. S. P.). All the vaginal folds are smoothed out and every part of the mucosa is scrubbed. The vulva and the region around the anus likewise are scrubbed. The scrubbing is one of the most important steps in the treatment, and it is usually persisted in until slight bleeding is noted in the vaginal mucosa. Bleeding generally occurs because the mucosa in these cases is friable. The soap is washed out with tap water or with mercuric chloride, and the vagina is dried thoroughly. A speculum is inserted into the vagina and hexylresorcinol is instilled into the vagina and applied all over the vaginal wall, in the vault of the vagina and on the cervix. A tampon saturated with half or full strength glycerin is then inserted high up into the vaginal vault. A second, dry, tampon is inserted to prevent the escape of glycerin on the patient's clothing. Hexylresorcinol is applied to the vulvar and anal regions and the patient is instructed to remove the tampons after twenty-four hours. The string of the second tampon has a knot tied in it, so that the patient may know that this tampon is to be pulled out first. After removal of the tampons, a douche of tincture of green soap is taken. The treatment outlined is repeated every second day for at least three times. The patient takes a green soap douche on the mornings between treatments but not on the mornings she is to receive a treatment. A douche is not taken on the morning of a treatment because it is desirable to see how much discharge there is and also because hanging drop examinations are made at that time. Treatment is continued until hanging drops on two successive visits fail to show the trichomonas. However, the patient is advised to take a 0.5 per cent lactic acid douche daily for about two weeks after treatment is discontinued. The purpose of the lactic acid douche is to attempt the reestablishment of a normal bacterial flora in the vagina.

A matter of great importance, but unpleasant to discuss, is the cleansing of the anus after a bowel movement. To accomplish the latter most women use an upward sweep toward the vagina and urethra, but this may produce reinfection if the causative organisms come from the rectum. The patients are instructed to use a sweeping motion directed away from the vagina and toward the sacrum. The significance of this method of cleansing the anal region should be impressed on the patient.

Since recurrences of the troublesome discharge occur in a certain proportion of cases, and since these frequently manifest themselves immediately after a menstrual period, it is advisable to reexamine patients just before and just after a menstrual period. If organisms are found, a course of treatments should again be given. If the treatments are begun just before a menstrual period, there is no harm in continuing the therapy throughout the duration of the menstrual flow and immediately after it. Kleegman,[9] Davis [5] and Rodecurt [13] treat all patients as a routine through the menses.

When a patient is cured it will be found that the parasites have disappeared, the character of the vaginal discharge was changed, the amount of it has been reduced to practically normal, the inflammatory changes in the vaginal wall have subsided, and the subjective symptoms have disappeared. Some patients have a persistently recurring discharge regardless of what therapy is used; many of these women are high-strung, sensitive persons. Recurrences may be due to cyst forms of *Trichomonas vaginalis* but not all protozoologists agree that there are cyst forms of this organism. It is hardly likely that the parasite remains submerged in or under the vaginal mucosa, because most authorities agree that the trichomonas lives on the vaginal mucosa and not under its surface.

SUMMARY

Trichomonas vaginalis vaginitis is a fairly common condition among pregnant and nonpregnant women. Its chief symptom is a profuse vaginal discharge, which in about half the cases is associated with a burning or itching sensation in the vagina and on the vulva. Frequently the discharge has a very disagreeable odor. The vaginal mucosa is usually orange-red and roughened; in the vagina a profuse, greenish yellow, foamy, purulent discharge is found. The simplest way to study and to identify the trichomonas organisms is by means of fresh hanging drops or drops diluted with salt solution. In the fresh hanging drop the organisms are easy to detect

12. Ratcliffe, H. L.: Am. J. Hyg. **10**: 643 (Nov.) 1929.

13. Rodecurt, M.: Med. Klin. **26**: 1228 (Aug. 15) 1930.

because they are in constant motion. The treatment that I am using at present consists of scrubbing the vulva and vagina with tincture of green soap, washing out the latter with mercuric chloride or tap water, applying hexylresorcinal to all parts of the vagina and vulva, and inserting tampons saturated with glycerin into the vagina. This treatment is repeated every two days until two consecutive hanging drops fail to show the trichomonas. Since recurrences are frequent, especially after a menstrual period, patients should be reexamined immediately before and just after the menstrual period, following the course of treatments. If trichomonas organisms are found, the treatment should be repeated.

185 North Wabash Avenue.

OBSERVATIONS ON EFFICIENCY OF COMMONLY USED HYPNOTICS*

G. P. GRABFIELD, M.D.
BOSTON

In recent years, many new sleep-producing drugs have been put on the market. For many of these, special advantages have been claimed. Some are chemically new, whereas others are mixtures, and still others are slight chemical modifications of the older hypnotics. Some twelve or fifteen have found their way into the accepted lists of New and Nonofficial Remedies or into the Pharmacopeia.

The hypnotic practice in hospitals is extremely varied, and while standardization of therapy is often undesirable, it seemed illogical to substitute new drugs for tried hypnotics without careful trial to prove the superiority of the latter. At the suggestion of Prof. H. A. Christian, my associates and I undertook a comparison of the efficiency of commonly used hypnotic drugs.

It occurred to us that a rough index of efficiency might be obtained by prescribing half the amount of the recommended doses and noting the number of doses that were required to produce a comfortable night's sleep. In this way the number of patients used, divided by the number of doses required, would give a rough index of efficiency. If the accepted dose, under such circumstances, was the correct one the indexes should run about 50 per cent. In deciding on the dose either half the pharmacopeial dose or half the dosage recommended by the manufacturer, in the case of a proprietary drug, was used. While the indexes were much higher, this method proved satisfactory. Two series of experiments were done, in the first of which the senior house officer was asked to prescribe the drug by name, and in the second one of which he was given the drug in a numbered bottle to be dispensed in the ward according to a given dosage. The difficulties of administration make the second series somewhat incomplete, as seen by the table, but it will also be seen that there is no essential variation between the first and the second series, thus eliminating any bias on the part of the house officers. The drugs selected are either in the U. S. Pharmacopeia or in the accepted list of New and Nonofficial Remedies.

The results are presented in tabular form, with the drugs arranged in groups. In only one case did the newer drug show any great advantage over the older ones of the same chemical group, and that was in the case of sabromin, which has certain chemical features that differentiate it from other bromide hypnotics, but the slightly increased efficiency does not compensate for the greatly increased cost.

A word as to the various drugs may be of interest in this connection. Codeine was included in this study because it has been amply shown by pharmacologic experiments [1] that codeine, while efficient in depressing the respiratory mechanism, is not very efficient either in relieving pain or in producing sleep (unless the sleeplessness is the result of coughing) and yet it has been extensively used in this hospital by the house officers for both these purposes. These experiments show its relatively low efficiency. Chloral hydrate has an interesting history. One of the earliest hypnotics introduced into medicine, it soon fell into disrepute on account of its depressing effect on the heart in the doses used. It will be seen, by looking back to the old records, that the dosage used was from 1 to 3 Gm. (from 15 to 45 grains) and the pharmacopeial dose is still 0.5 Gm. (7½ grains). However, some years ago, in this hospital, it was used in 5 grain (0.3 Gm.) doses in cardiac patients without demonstrable ill effects. It will be seen from the accompanying table that, even in the small dose prescribed, it is the most efficient of the

Results of Observations

Chemical Group	Drug	Dose Used, Gm.	First Series: Drug Given by Name							Second Series: Drug Given by Number							Totals Both Series			Cost Index, Chloral Hydrate = 100
			Patients With Pain	Doses	Patients Without Pain	Doses	Total Number of Patients	Doses	Index of Efficiency	Patients With Pain	Doses	Patients Without Pain	Doses	Total Number of Patients	Doses	Index of Efficiency	Number of Patients	Doses	Index of Efficiency	
Alkaloid	Codeine	0.015	8	9	13	14	21	23	0.91	7	9	15	18	22	27	0.81	43	50	0.86	1,270
Chloroform	Chloral hydrate	0.150	1	1	17	18	18	19	0.95	2	2	8	8	10	10	1.00	28	29	0.97	100
	Butylchloral hydrate	0.150	5	10	15	21	20	31	0.65	4	5	9	11	13	16	0.81	33	47	0.70	700
	Chlorbutanol	0.150	5	5	22	24	27	29	0.93	9	10	23	32	32	42	0.76	59	71	0.83	510
Barbituric Acid	Barbital	0.150	11	11	18	20	29	31	0.94	..	..	..	..	..	..	....	29	31	0.94	480
	Amytal	0.050	8	16	12	22	20	38	0.53	..	..	..	..	..	..	....	20	38	0.53	1,160
	Phenobarbital	0.050	10	13	10	14	20	27	0.74	2	4	3	5	5	9	0.51	25	36	0.69	670
	Phanodorn	0.100	5	6	15	18	20	24	0.83	2	2	33	35	35	37	0.95	55	61	0.90	2,500
	Ypral	0.060	3	4	17	20	20	24	0.83	..	..	..	..	23	37	0.62	43	61	0.71	1,330
	Neonal	0.050	12	14	9	9	21	23	0.91	11	15	26	29	37	44	0.84	58	67	0.86	1,000
Bromine	Carbromal	0.300	12	20	15	23	27	43	0.63	2	3	16	18	18	21	0.86	45	64	0.70	3,300
	Bromural	0.300	6	8	14	16	20	24	0.83	..	..	..	..	24	36	0.67	44	60	0.73	3,300
	Sabromin	0.300	3	3	17	18	20	21	0.95	..	..	..	..	..	..	....	20	21	0.95	1,800

*From the Medical Clinic, Peter Bent Brigham Hospital.

1. Cushny, A. R.: A Textbook of Pharmacology and Therapeutics, Philadelphia, Lea & Febiger, 1924.

entire series of drugs tried and far more efficient than the other chloroform derivatives.

Similarly, it was interesting to find that barbital itself, as originally introduced by Fischer and von Mering,[2] is the most efficient of the many barbituric derivatives that have been placed on the market. Phenobarbital (luminal) was introduced for its effect on the motor cortex and is as efficient as bromide in the treatment of epilepsy. This particular virtue would necessarily reduce, by approximately one half, its efficiency as an hypnotic and would increase the toxicity as compared with barbital itself. Its low place in this series coincides with the theoretical expectations. One of the best of the newer barbituric acid derivatives is neonal, which substitutes a normal butyl group for one of the ethyl groups in barbital. This was among the better of the eighteen barbituric acid compounds originally studied by Fischer and von Mering. Other drugs in this series are slight modifications of those originally studied and discarded by them. For example, "amytal," which is isoamylethylbarbituric acid, was not studied as much by von Mering and Fischer, but they discarded diamylbarbituric acid because of its prolonged after-effect on the central nervous system, especially the equilibrating mechanism, and because of its relative toxicity. In any case, as far as the barbituric acid group goes, none of the newer ones used as hypnotics are superior to the original barbital, and it is difficult to see how any one can justify their use. The efficiency of sabromin was a distinct surprise to us, and it is possible that it represents a new type of bromine hypnotic involving the substitution of an unsaturated fatty acid.

One other item is of great importance, both to hospitals and to patients, and that is the matter of cost. In one column of the table is seen a cost index. This represents the relative cost per dose. From this it will be seen that the two most efficient hypnotics, namely, chloral hydrate and barbital, are also the cheapest. Independently, at the University of California, Leake [3] and his co-workers studied a series of barbituric acid derivatives, in relation to their efficiency in preoperative medication. They reached the conclusion that "if no significant analgesic effect is desired, barbital by mouth may be recommended as a substitute for morphine as a preanesthetic hypnotic. Commercially available barbital derivatives offer no advantages over barbital in this respect but are usually much more expensive and may have untoward side actions."

Chloral hydrate in small doses and barbital are the most effective and cheapest nonalkaloidal hypnotics available today. In addition, it is worth emphasizing that satisfactory results are obtained with much smaller doses than are customarily used.

319 Longwood Avenue.

2. Fischer, E., and von Mering, J.: Therap. d. Gegenw. **5**: 97 (March) 1903.
3. Leake, C. D.: J. Pharmacol. & Exper. Therap. **29**: 272 (July) 1930.

The Supreme Consequence in Individual Existence.—The biologist very well knows that the most important part of individual existence for man is passed and over before birth. The maturation of the germ cells, the gametes, in the two future parents—the union of a particular two of these gametes, a male cell or spermatozoon from the father and an ovum or egg from the mother, to form the new person—is the supreme consequence in individual existence. No other two germ cells from the same two parents would, as they unite on the basis of chance, make quite this individual person, but rather a brother or sister.—Stockard, Charles R.: The Physical Basis of Personality, New York: W. W. Norton & Co., Inc., 1931.

Clinical Notes, Suggestions, and New Instruments

A CASE OF THALLIUM POISONING FOLLOWING THE PROLONGED USE OF A DEPILATORY CREAM*

W. S. DUNCAN, M.D., AND E. H. CROSBY, M.D.
CLEVELAND

THE JOURNAL recently published an article [1] bringing to the attention of the medical profession the sale of a depilatory cream which was found to be particularly high in thallium acetate content. This article led to the correct diagnosis in the following case:

REPORT OF CASE

A white woman, aged 24, came to the Cleveland Clinic complaining of severe pain over the soles of both feet and ankles, weakness of both feet and legs, and intense burning of both feet, most marked in the third, fourth and fifth toes. She had been receiving treatment elsewhere for arthritis of both feet and ankles.

Four and one-half months prior to entering the clinic, the patient had first noticed intermittent epigastric pains which gradually increased in severity to sharp, cramplike pains throughout the entire abdomen. These pains were associated with nausea, several attacks of vomiting, loss of appetite and substernal pain, but were unrelated to the taking of food. Two months after the onset, the abdominal pain subsided and the patient first noticed burning and numbness of the third, fourth and fifth toes of both feet. The onset of this numbness and burning was insidious and at first was apparent only while the patient was bathing. As the numbness increased and the burning became intense and almost constant there developed an increased sensitivity of the skin over the soles of both feet, the outer three toes, the dorsum of the feet, and the anterior surfaces of the ankles and legs, extending to the knees. Weakness was then noticed in the third, fourth and fifth toes gradually extending to include the muscles of the calves and the thighs. During the three weeks preceding her examination at the clinic, these symptoms were so severe that the pressure of the bedclothes caused pain, and walking was almost impossible. Several dizzy spells were experienced and at times the vision was blurred. The patient had become very nervous, cried easily, had lost about 10 pounds (4.5 Kg.) and felt continually tired.

The past history revealed the following facts: The patient had used alcohol for a period of time, the amount, however, having been greatly reduced in the preceding year and a half; cigarets had been used somewhat in excess, from twenty-five to thirty in a day, and for several years she had used a henna rinse after washing her hair.

The family history revealed nothing relevant to the existing condition. The menstrual history was significant in that the last period had occurred seven weeks previous to examination.

Physical examination revealed undernourishment, apprehension and emotional instability. The temperature, pulse, respiration, and blood pressure were within normal limits. The hair was definitely henna-colored but firmly embedded. Hair was distributed normally over the body with the exception of the face, where the growth was more profuse than is normal and this hair was firmly embedded. The pupils were equal and reacted to light and in accommodation. Ophthalmoscopic examination showed that the fundi were entirely within normal limits. The ears and the nose were normal. The tonsils had been removed and no fragments remained. No pathologic condition was found that would account for the patient's dizziness. The tongue was heavily coated; it protruded in the midline and a fine tremor was present. The teeth were in good repair but there was infection of the gums, particularly about the lower incisors. The thyroid gland and the lymph glands showed no enlargement. The breasts were small and firm, and a small amount of colostrum could be expressed. The lungs and heart were normal. The abdomen was flat and

* From the Cleveland Clinic.
1. Koremlu: A Dangerous Depilatory Containing Thallium Acetate, J. A. M. A. **96**: 629 (Feb. 21) 1931.

symmetrical, and tenderness was present throughout on deep palpation. The pelvic examination showed the vaginal mucous membranes to be slightly blue in appearance, the cervix soft, the fundus enlarged posteriorly, and uterine arteries definitely palpable. The upper extremities were normal. The lower extremities were of equal length. There was obvious muscular atrophy of the thigh and calf group of muscles, which was slightly more marked on the left side. A moderate degree of bilateral drop foot was present associated with marked weakness with complete inability to move the three lateral toes on either lower extremity. Heat and cold were readily distinguished by the patient over all areas of the body. Touch and pain sense perceptions were markedly increased over the outer surface of each calf, the lateral surface of the feet including the third, fourth and fifth toes, and the soles of the feet. Touch and pain were less readily appreciated over the medial surface of each calf. All reflexes could be readily elicited. The knee jerks were hyperactive; the Babinski test was not elicited. No rombergism was present. Movement of the lower extremities was painful, probably because of increased skin and muscle sensitivity. There was no evidence of joint reaction apart from some thickening about the metatarsophalangeal joints. Heat could not be tolerated on either lower extremity. All the other joints were normal.

The urine was normal except for an occasional pus cell. The red blood cells numbered 3,875,000 per cubic millimeter, the white blood cells 10,750 per cubic millimeter, hemoglobin 78 per cent (Tallqvist), polymorphonuclear neutrophils 76 per cent, small lymphocytes 23 per cent, transitionals 1 per cent.

Temperature of the Toes

	Left Foot, Degrees Centigrade	Right Foot, Degrees Centigrade
First toe	34.8	34.4
Second toe	33.8	34.7
Third toe	35.0	35.9
Fourth toe	36.3	36.2
Fifth toe	37.8	35.9

The phenolsulphonphthalein return was within normal limits; blood calcium, sugar, and urea were within normal limits; the Wassermann reaction was negative. A blood smear stained with Wright's stain showed nothing abnormal. Flame and spectroscopic examination of a twenty-four hour specimen of urine showed the presence of a small amount of thallium.

The temperature about both feet, recorded with a skin thermometer, is given in the accompanying table. The normal temperature with this thermometer is from 32 to 33 C.

Galvanic and faradic stimulation over the muscles of each lower extremity gave no response. Only with currents higher than normal could a response be obtained when the external popliteal and anterior tibial nerves were stimulated.

The patient was admitted to the Cleveland Clinic Hospital with a diagnosis of peripheral neuritis of obscure origin, associated with early pregnancy. After admission, it was discovered on further questioning of the patient that she had been using a depilatory cream, "Koremlu," nightly for the preceding five months, beginning its use two weeks before the appearance of the first symptoms. A quantity sufficient only to cover the upper lip and the chin had been used on each occasion. At each application the cream was well rubbed in.

Careful questioning revealed the fact that a henna hair rinse had been used every four months for the preceding five years. Henna is a harmless vegetable, but in the manufacture of hair dyes and washes either a salt of some one of the heavy metals or a coal tar product is added. Although these materials are toxic, it is scarcely possible that the existing neuritis could be traced to the dye, which was used at such infrequent intervals. Alcohol had been used for the preceding six years but only in very moderate quantity during the preceding year and a half and the alcohol had been analyzed prior to its consumption. From twenty to twenty-five cigarets had been used daily over a period of months, but this obviously could not account for the condition. It was therefore concluded that the peripheral neuritis was most logically attributable to the toxic effects of thallium absorbed from the depilatory cream.

There was no doubt concerning the diagnosis of pregnancy and the question immediately arose as to the advisability of a therapeutic abortion. There were three excellent reasons why a therapeutic abortion should be induced:

1. In thallium poisoning the ductless glands are especially involved. Dixon[2] has produced cretinism experimentally in young animals by chronic poisoning with thallium, probably by its action on the thyroid gland.

2. In thallium poisoning the kidneys are temporarily damaged, producing albuminuria. Although the patient showed no kidney damage, the added burden of pregnancy increased the probability of interference with kidney function.

3. The mild toxicity associated with pregnancy would be an added hazard to the recovery from a condition in which the prognosis could not be definitely determined.

Following consultation, therefore, it was considered advisable to induce abortion and an attempt was made by the use of theelin and oxytocin in the following manner:

At 8 p. m. the patient was given 2 cc. (100 units) of theelin, subcutaneously. At 8 a. m. the following morning she was again given 2 cc. At noon she was given 3 cc.; at 4 p. m. she again received 3 cc. At 8 p. m. the dose was increased to 4 cc., and the following day she received four doses of 4 cc. each. The next morning at 8 o'clock she was given 4 cc. of theelin, and after that she was given oxytocin in four doses of 0.5 cc. each, at half hour intervals. She received a total of 34 cc. (1,700 units) of theelin and 2 cc. of oxytocin. No change was noted by rectum in the size of the external os, and no pains or abdominal discomfort were experienced by the patient. Twenty-four hours later the advisability of giving more oxytocin was considered, but owing to the fact that the urinary output was considerably reduced during these twenty-four hours, it was considered inadvisable to make any further attempt to induce abortion in this manner.

As the method described was found to be inadequate, a dilation and curettage was carried out following packing of the cervix and uterus, which had been done on the preceding day.

The patient was discharged from the hospital within a short period and since that time has shown definite improvement. She still suffers from very persistent burning in the feet, with weakness in the toes, which were affected at the time of her admission to hospital.

COMMENT

Thallium was discovered by Crookes in 1861 and investigated chemically by Lany in 1863. It was introduced into medicine about twenty years ago as a remedy for certain disorders of the skin. Thallium (atomic weight 204) belongs in the group with zinc, lead and tin. In its action it resembles potassium and arsenic rather than the heavy metals and is an active poison, being slightly more toxic than arsenic and having a distinctly accumulative effect. Acute thallium poisoning is characterized by stimulation of the heart followed by depression, resulting in death from cardiac failure. Chronic thallium poisoning is characterized by injury of the endocrine glands, peripheral neuritis, and falling out of the hair even to complete alopecia. Very small doses fed to young animals cause stunted growth and symptoms of cretinism.

Thallium has been used in the treatment of syphilis, for the arrest of night sweats in phthisis, and in the treatment of cystitis. Its use, however, has been abandoned because of the toxic symptoms that it produces. Dermatologists use thallium in small doses to produce epilation in diseases of the scalp in children, and Davies and Andrews[3] showed that children up to 7 or 8 years of age withstand the action of thallium well. Older children and adults are more likely to show toxic symptoms. In one of their cases, arthritis and periarthritis of the knee joints were present.

2. Dixon, W. E.: Thallium, Proc. Roy. Soc. Med. (Sect. Dermat.) **20**: 77-80, 1927.

3. Davies, J. H. T., and Andrews, M. C.: A Case of Thallium Poisoning, Brit. M. J. **2**: 1139-1140 (Dec. 17) 1927.

In 1912, Sabouraud,[4] a French authority on diseases of the hair and scalp, devised an ointment of thallium acetate for use in the removal of superflous hair. Since that time, accidents have been reported from its use. The original Sabouraud prescription called for an introduction into the ointment of not more than 1 per cent of thallium acetate and Sabouraud urged that even in this dosage it should be applied only once a day and that an amount of the ointment not larger than two kernels of wheat should be used. Ointments containing 1 per cent of thallium acetate should not be used over an extensive surface.

Dixon pointed out that thallium used experimentally in animals which had been shaved produced a rapid growth of hair. He also reports that thallium salts exert no local action but when rubbed into the skin with oil or alcohol are rapidly absorbed and produce a systemic reaction, the effect being mainly on the autonomic motor system, which becomes more sensitive, so that electrical stimulation of the nerves produces an exaggerated response, even though the stimuli are below the normal response level.

Ormerod,[5] by postmortem analysis of body structures, showed that the muscles act as the main storehouse for thallium and that the excretion is mainly by the kidneys, but that thallium is also excreted in all the body secretions.

REPORTS OF THALLIUM ACETATE POISONING FOLLOWING THE USE OF KOREMLU

SIGMUND S. GREENBAUM, M.D., PHILADELPHIA

Miss I. S., aged 24, was referred to me by Dr. Louis B. Schatz, April 8, 1931, because of a loss of hair. The patient stated that the hair had begun to come out rather suddenly about three or four weeks before. The alopecia was incomplete but very marked.

Close questioning of the patient revealed the fact that on or about January 15 she started to use a new depilatory ("Koremlu Cream"), costing $10 per jar and put up in the form of a cream. A small amount was to be rubbed in daily and, at certain intervals, some of the loosened hairs were to be extracted.

The cream had been purchased at one of the large department stores. The drug buyer of the store stated that this was the first untoward result in 400 sales but that they had discontinued the sale of this depilatory, although it is still being sold extensively elsewhere as harmless.

There was a loss of hair on the scalp, and hypertrichosis persisted on the upper lip and cheek.

JAY FRANK SCHAMBERG, M.D., PHILADELPHIA

On April 12 I saw a young woman, seriously ill as a result of thallium poisoning. An internist friend of mine and one of my assistants has each likewise seen a case of thallium poisoning within recent months. A description of the case that I saw follows:

A woman, aged 28, single, presented herself with loss of seven eights of the hair on the scalp; the hair fall has been particularly pronounced during the past three weeks, although it existed for some weeks before.

She reported that she had been using "Koremlu Cream" in the axilla to get rid of hair there. The hair in the armpits still persists. She first used the preparation in April or May of 1930 and used it every night, with some intervals of rest, until October, when she had a severe nervous breakdown. Then its use was interrupted but was resumed again for two weeks in February. She gradually observed a loss of hair on the scalp but at first did not pay much attention to it. There then developed pains in the legs and weakness, and likewise neuritic pains in the arms. There now exists a multiple neuritis with considerable weakness in the lower extremities. The urine is normal; there is a slight loss in weight and the patient is highly nervous.

4. Dangers from Use of Thallium Acetate, Paris Letter, J. A. M. A. **94**: 197 (Jan. 18) 1930.
5. Ormerod, M. J.: Pharmacological and Toxicological Aspects of Thallium, Canad. M. A. J. **19**: 663-665 (Dec.) 1928.

THE KEEPING QUALITY OF TUBERCULIN DILUTIONS*

J. D. PILCHER, M.D., CLEVELAND

As there was a possibility that the potency of tuberculin dilutions deteriorated fairly rapidly even when kept at icebox temperature, fresh dilutions had been made bimonthly in this hospital. The preparation of the dilutions involved expenditure of considerable time and often waste of material as the older solutions were discarded. The keeping quality of tuberculin dilutions is of importance to the practitioner also who needs to use tuberculin but occasionally. As no reference was found in the *Quarterly Cumulative Index Medicus* to this subject, the activity of tuberculin dilutions has been determined during a period of some three to four years. The weaker dilutions, 1 : 10,000 and 1 : 1,000, were examined from time to time but the 1 : 100 and 1 : 10 dilutions only at the end of the experiment as they were considered to be more stable than the weaker ones.

The dilutions were made in distilled water with 0.2 per cent tricresol as a preservative and except when in use were kept in a ward icebox which maintains a temperature of from 38 to 40 F. (4 C.). The solutions were kept in small rubber capped amber bottles. When tested, tincture of iodine and then alcohol were applied to the cork, and the needle of the syringe was pressed through the cork in the usual way and the solution withdrawn. At the end of the experiment the contents of the bottles, withdrawn by syringe in the same manner, were sterile although the solutions were from two to four years old. There were three 1 : 10,000 solutions used; two of them had been kept three years approximately (thirty-four and thirty-nine months), and the third for two years, when finally tested; but one 1 : 1,000 dilution was tested. In making the tests approximately 0.1 cc. of the solution was injected into the skin of the forearm toward the elbow of subjects known to be tuberculin positive.

RESULTS OF TESTS

Each of the 1 : 10,000 solutions that were approximately three years old retained considerable potency. They were tested on five subjects who were quite sensitive to fresh 1 : 10,000 solution, and each solution was tested on at least two subjects. The local reactions varied in diameter from 1.2 to 3 cm. with considerable induration in each case, and in three instances (two of them in one subject) there was vesicle formation with slight sloughing. The two year old solution also gave similar reactions in two subjects.

It was not possible to determine what percentage of the potency had been retained, for none of the patients on whom it had been tested originally could be tested at the final period, but the reaction to a 1 : 10,000 dilution was about the same in one subject after a lapse of fifteen months. Then, too, tuberculin sensitivity may vary considerably from time to time in a given subject, which would prevent accurate comparison even in the same subject. However, one of the three year old solutions retained most of its potency while the other apparently had lost a considerable part, for while it gave good reactions in five subjects, in three of them the reaction was comparable to, although greater than, a fresh 1 : 40,000 solution; this result does not imply that it lost roughly three fourths of its potency; merely that it had lost a considerable part.

A single 1 : 1,000 solution, as tested on three subjects, seemed to retain its activity during a period of thirty-nine months as compared with fresh dilutions of the same strength; and the same solution at four years gave decidedly positive reactions in three subjects in 0.03, 0.05 and 0.1 cc. (mg.) doses. One sample each of the 1 : 100 and 1 : 10 dilutions, each more than three and one-half years old, was diluted to a 1 : 10,000 solution, and each gave a typical well indurated tuberculin reaction on intracutaneous injection.

It is perhaps unfortunate that similar tuberculin dilutions were not kept at room temperature for the same period, since many physicians do not have access to cooling systems such as here used, nor to the ordinary icebox. However, it is significant that a 1 : 1,000 solution of tuberculin of the same stock used in this work that had been kept at room temperature in

* From the Babies and Childrens Hospital and the Department of Pediatrics, Western Reserve University School of Medicine.

the office of one of my associates for about a year and a half gave a marked typical reaction with sloughing in a routine intradermal test.

CONCLUSIONS

Tuberculin dilutions, made with 0.2 per cent aqueous tricresol as a preservative, keep for months with little loss of potency. It would seem safe to keep stock dilutions of 1:10 or 1:100 for a year or more without practical loss of activity.

3395 Scranton Road.

Special Article

THE INDISPENSABLE USES OF NARCOTICS

CHEMISTRY OF BARBITAL AND ITS DERIVATIVES *

GEORGE W. COLLINS, Sc.D.

AND

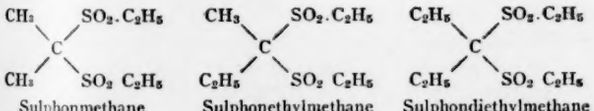
PAUL NICHOLAS LEECH, PH.D.

Chemist and Director, Respectively, Chemical Laboratory, American Medical Association

CHICAGO

The increased use of hypnotics undoubtedly has been due in large measure to the zeal with which pharmaceutic houses vie with one another in introducing new, though not dissimilar, proprietary synthetics having sedative properties. Today, barbital and its derivatives are by far the most widely used. Yet it was scarcely a century ago that the first synthetic substance to be used as an hypnotic was prepared, namely, chloral hydrate. Liebig discussed its chemistry in 1832,[1] but it was not until 1869 that Liebreich [2] reported extensively on its pharmacologic action. Since then there have been many contributions to hypnotics before the present-day popularization of the barbital class. It will serve to mention some of the common ones, such as paraldehyde, ethyl carbamate (urethane), acetophenone (introduced as hypnone and still used to a certain extent in Italy), a tertiary alcohol, dimethylethyl carbinol (known as amylene hydrate), sulphonmethane (sulphonal), and chlorbutanol (chloretone).

Next to the barbitals, the sulphone derivatives, so named because they contain sulphur attached to carbon, are still most popular. They may be illustrated by the following structural graphs:



Sulphonmethane (Sulphonal) — Sulphonethylmethane (Trional) — Sulphondiethylmethane (Tetronal)

The hypnotic properties of the sulphone derivatives were accidentally discovered by Kast.[3] Their chemical relationship and pharmacologic actions were studied by Baumann and Kast,[4] whose conclusions had an important bearing on the other investigations that followed. Their hypnotic property is purported to increase with the number of ethyl groups present. However, this claim was never completely substantiated.

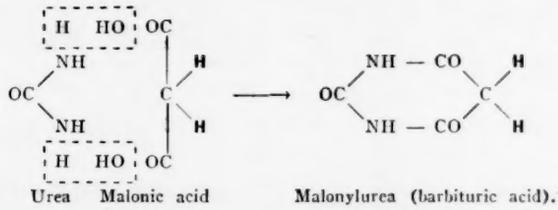
UREIDES

The ureide hypnotics constitute the most important class. Urea, an end product of protein metabolism, is not in itself considered as being hypnotic in action. It is capable, however, of readily forming chemical combinations with other relatively simple substances which yield, in turn, substances that are extraordinarily active as hypnotics. Because of the fact that urea is such an important component of these compounds, it is perhaps best to mention a portion of its history, particularly in its relationship to the chemistry of the barbitals

UREA

Urea is of great historical interest as the first organic compound to have been prepared synthetically. In 1828, Wöhler [5] produced it artificially by evaporating an aqueous solution of ammonium cyanate,[6] the salt thus being converted into urea.

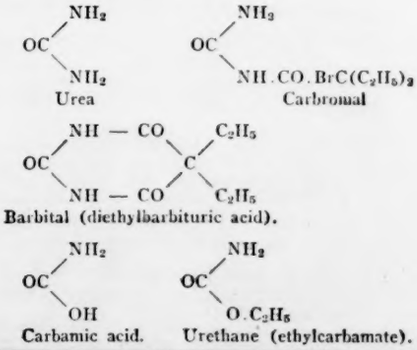
Urea, as an amino compound (substituted ammonia) may be combined with acids with a resultant loss of water to form a series of compounds that are analogous to amides. It may be recalled that malonic acid is a classic example of synthesizing—the so-called malonic acid synthesis. Thus one may graphically represent urea and malonic acid reacting according to the following graphic formulas, forming what is called malonylurea.[7] The latter also is called barbituric acid.



Urea — Malonic acid — Malonylurea (barbituric acid).

CLASSES OF UREIDES

For convenience, Sollmann [8] has classed the three most important types of ureides as represented by carbromal, barbital and urethane.



* These articles are prepared under a plan of cooperation between the American Medical Association, the Committee on Drug Addiction of the Division of Medical Sciences of the National Research Council, and the Division of Mental Hygiene of the United States Public Health Service. Their object is to reduce the legitimate use of addiction drugs to a minimum by replacement, wherever possible, with other remedies that will accomplish the desired result. The physicians of the United States are the essential group in any such attempt and it is hoped that these articles will be useful to them in their practice. The funds for this work have been donated to the National Research Council by the Bureau of Social Hygiene, Inc.

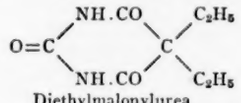
1. Liebig: Ann. d. Chem. **1**: 189, 1832.
2. Liebreich: Ueber das Verhalten der trichloressigsauren Salze und des Chlorals im thierischen Organismus, Berl. deutsche chem. Ges. **2**: 269, 1869.
3. Kast, A.: Berl. klin. Wchnschr., 1888, number 16, p. 309.
4. Baumann and Kast: Ztschr. f. physiol. Chem. **14**: 52, 1890.
5. Wöhler: Berz. Jahresb.: Jahresbericht über die Fortschritte der physischen Wissenschaften (später „über die Fortschritte der Chemie und Mineralogie") von Jacob Berzelius **12**: 266, 1828.
6. Ammonium cyanate and urea are isomeric; the conversion of one into the other is called an intramolecular change because it simply involves a rearrangement of the atoms within the molecule, the structure $NH_4.O.C{:}N$ being transformed into $NH_2.CO.NH_2$. However, the conversion of the former into the latter in aqueous solution is a reversible reaction; hence the conversion is never complete.
7. The hydrogens of malonylurea, indicated by the boldface H's, are very reactive and may be replaced by various radicals. For instance, if two ethyl groups are substituted, the resulting compound is diethylbarbituric acid, or barbital.
8. Sollmann, T.: A Manual of Pharmacology, ed. 3, Philadelphia, W. B. Saunders Company.

Malonylurea (barbituric acid) acts like an acid[9] forming salts. A series of derivatives of malonylurea have also been prepared which were of great value in the establishment of the constitution of uric acid,[10] and in turn led to their medicinal applications.

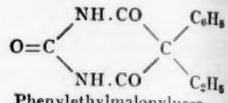
It is important to bear in mind that the two hydrogen atoms in the methylene group (CH_2) of malonylurea (barbituric acid) are very reactive. These may be easily replaced by bromine (Br); hydroxy (OH); nitro ($-NO_2$) or *iso*-nitroso ($=NOH$); indirectly, therefore, one may substitute one or two ethyl, *iso*-butyl, *iso*-propyl, amyl, allyl or other groups. Thus there is given a large opportunity for pharmaceutic houses each to have its own derivative, differing chiefly in what group the chemist wishes to substitute.

BARBITAL (VERONAL) AND DERIVATIVES

Barbital was first introduced into medicine by Emil Fischer and von Mering[11] under the name of veronal.[12] Barbital (diethylbarbituric acid) is official in the United States Pharmacopeia X. Barbital may be prepared by the interaction of esters of diethylmalonic acid with urea in the presence of metallic alcoholates. "It is also obtained by condensation of diethylcyanacetic ester with urea by means of sodium alcoholate."[13] Barbital still remains the leading hypnotic of the malonylurea series, though its introduction was immediately followed by phenobarbital (introduced as luminal), which by a slight chemical modification differs from barbital in that one of the ethyl groups has been replaced by a phenyl group.



Diethylmalonylurea
(Barbital)



Phenylethylmalonylurea
(Phenobarbital)

These so-called acids are only sparingly soluble in water, but the sodium salts are freely soluble in water. Sodium barbital (soluble barbital, U. S. P.) was introduced in medicine under the proprietary name of Medinal (Chemische Fabrik auf Actien, vorm., E. Schering, Berlin, [Schering & Glatz, New York]) and Veronal-Sodium (Farbenfabriken, vorm., Friedr. Bayer & Co., Elberfeld, Germany [Farbenfabriken of Elberfeld Co., New York] and E. Merck, Darmstadt, Germany [Merck & Co., New York]); phenobarbital (Luminal [Winthrop Chemical Company, Inc.]) is official in the U. S. Pharmacopeia X, while the sodium salt of phenobarbital (Luminal-Sodium) is described in New and Nonofficial Remedies.[14]

During the last decade many new cyclic ureides have been exploited, although their therapeutic claims have not all been substantiated. It is quite interesting to enumerate a number of them from the point of view of their chemical composition.

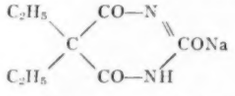
Allyl-*iso*-propyl barbituric acid is the hypnotic ingredient in two widely advertised proprietaries. A preparation claimed to consist of a compound of allyl-*iso*-propyl barbituric acid and amidopyrine, with free allyl-*iso*-propyl barbituric acid, is Allonal[15] (Hoffman La Roche, Inc.). Allyl-*iso*-propyl malonylurea (allyl-*iso*-propyl barbituric acid) differs from barbital in that both ethyl groups are replaced, one by an allyl group and the other by an *iso*-propyl group. The American Medical Association Chemical Laboratory has reported that in "Allonal" the amount of barbital derivative and amidopyrine were not in molecular proportions; hence the claims which had been advanced by the manufacturer for definite molecular combination were not substantiated. Elixir Alurate[16] (Hoffman La Roche, Inc.) is apparently a solution of allyl-*iso*-propyl barbituric acid in a hydro-alcoholic solution.[17]

Amytal (Eli Lilly & Company) is ethyl-*iso*-amyl barbituric acid, which differs from the parent substance (*di*-ethylbarbituric acid) in that one of the ethyl groups of the latter is replaced by an *iso*-amyl group. The monosodium salt of this acid has been placed on the market under the name Sodium Amytal.

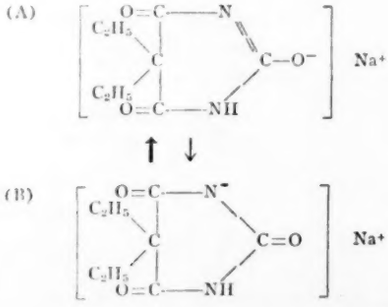
Dial (Ciba Company, Inc.), another of the barbital derivatives, is *di*-allyl barbituric acid. It differs from barbital (the *di*-ethyl derivative) in that both of the ethyl groups are replaced by allyl groups.

Ipral (E. R. Squibb & Sons) is the calcium salt of ethyl-*iso*-propyl barbituric acid. The parent substance of Ipral, ethyl-*iso*-propyl barbituric acid, is a slight modification of barbital; one of the ethyl groups has been replaced by an *iso*-propyl group.

9. Barbituric, parabanic, uric acids, etc., do not contain a "carboxylic" group, common to the true type of organic acids. Nevertheless, they form stable salts with strong alkalis. This may be considered as due to the fact that the lactam formation (—CO—NH—) is in equilibrium with the lactim form (—C(OH):N—), which exists in small amount but with which the alkali readily reacts. Thus the sodium salt of diethyl barbituric acid may be considered to have the structural formula:



Considered in solution as 100 per cent ionized it may, according to Stieglitz (personal communication) be represented as:



That is, the oxide ion formed (A) is capable of forming the tautomeric nitride ion (B), which latter is probably present only to a very slight extent.

10. Fischer, E.: Ann. d. Chem. **215:** 253, 1882.

11. Fischer, E., and von Mering: Ueber eine neue Klasse von Schlafmitteln, Therap. d. Gegenw. **44:** 97, 1903.

12. It is curious to note that, according to widely current views, this compound derived its name from the city of Verona (The Prescriber **22:** 386, 1928). Dr. Reid Hunt states that according to the stories heard in Germany years ago, one of the promoters was trying to think of an easily pronounced and remembered name ending in "al" which could be trademarked; he was then traveling in Italy and the railroad guard called out the station "Verona." According to a personal communication from Dr. C. S. Hudson of the National Institute of Health, this origin of the name is not considered correct. H. O. L. Fischer, a son of Emil Fischer, told Dr. Hudson last summer that the name veronal was derived from the Latin word verus (true). Von Mering had prepared a substance with good narcotic properties and a supposed formula. Fischer then prepared synthetically the supposed formula substance and found it was better in hypnotic properties than the von Mering substance, and jokingly said, "Now we have Der Wahre Jacob." From this jest they decided to call it the "true" substance (or veronal).

13. Leech, P. N.; Rabak, W., and Clark, A. H.: American Made Synthetic Drugs, J. A. M. A. **73:** 754-759 (Sept. 6) 1919.

14. Generally abbreviated N. N. R. A volume published annually by the Council on Pharmacy and Chemistry of the American Medical Association. It describes those nonofficial remedies which have promise of merit and are marketed in accordance with the rules of the Council.

15. Report of Council on Pharmacy and Chemistry, J. A. M. A. **86:** 1853 (June 12) 1926.

16. On the label appears the statement "Allyl-*iso*-propyl barbiturate." This is a technical misnomer as the "acid" form is present and not the salt as is indicated by the ending "ate."

17. Neither Allonal nor Elixir of Alurate stands accepted by the Council on Pharmacy and Chemistry (March 1, 1931).

Neonal (Abbott Laboratories) is *n*-butylethyl barbituric acid, which before introduction in medicine in the United States was known in France as Soneryl. It differs from barbital (*di*-ethyl barbituric acid) in that one of the ethyl groups of the latter has been replaced by a *n*-butyl group.

Nostal (Riedel de Häen, Inc.), *iso*-propyl-β-bromallyl barbituric acid, is another barbital derivative which before introduction in medicine in this country was known in Germany as Noctal. It differs from barbital (*di*-ethyl barbituric acid) in that both of the ethyl groups are replaced, one by an *iso*-propyl group and the other by a substituted *brominated* allyl group. Unlike allyl-*iso*-propyl barbituric acid (the hypnotic component of Allonal-Roche) it contains a bromallyl group instead of an allyl group.

Pentobarbital-sodium is a nonproprietary name given to the mono-sodium salt of ethyl-(*1*-methylbutyl) barbituric acid, which was recently introduced in medicine under two different names; namely, Nembutal and Sodium *iso*-Amytal, sponsored by the Abbott Laboratories and Eli Lilly & Company, respectively. It differs from Soluble Barbital, U. S. P. X (sodium *di*-ethyl barbiturate) in that one of the ethyl groups of the former has been replaced by a *1*-methylbutyl group. Pentobarbital-sodium is an isomer of sodium amytal and, therefore, similar in chemistry and actions.

Pernoston (Riedel de Häen, Inc.) is a 10 per cent solution of the sodium salt of secondary butyl-β-bromallyl barbituric acid that has been used in Germany for some time and recently introduced in this country. It was known abroad as Pernocton. The parent substance *sec.*-butyl-β-bromallyl barbituric acid differs from barbital (*di*-ethyl barbituric acid) in that the ethyl groups are replaced by a (normal) secondary butyl group and a bromallyl group; it resembles Nostal (*iso*-propyl-β-bromallyl barbituric acid) in that it contains a secondary butyl group instead of an *iso*-propyl group. Pernoston is the simplest type of a barbituric acid derivative that has an asymmetrically branched hydrocarbon chain besides the bromallyl group. Neither Nostal nor Pernoston has as yet been accepted by the Council on Pharmacy and Chemistry (March 1, 1931).

Phanodorn (Winthrop Chemical Company, Inc.) is a proprietary name for cyclohexenyl-ethyl barbituric acid, which has come into somewhat extended use in Europe. It differs from barbital in that one of the ethyl groups has been replaced by a cyclohexenyl group. It resembles the well known hypnotic phenobarbital in that an unsaturated ring compound, hexenyl, (C_6H_9) group, has replaced the phenyl, (C_6H_5) group.

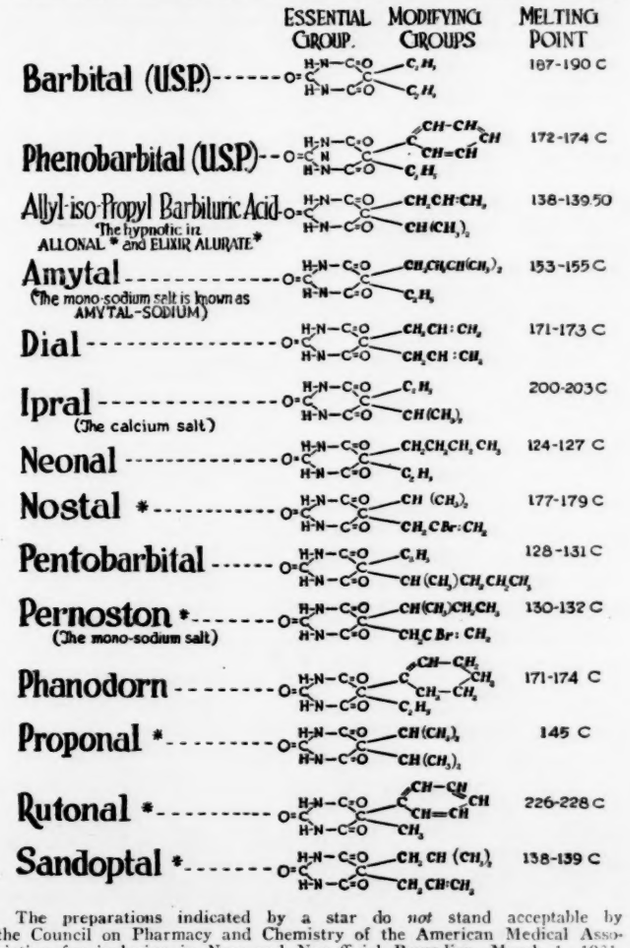
Sandoptal (Sandoz Chemical Works, Inc.) *iso*-butylallyl barbituric acid, is an addition to the relatively large number of substituted barbituric acids that have been introduced into medicine. It differs from barbital in that both of the ethyl groups have been replaced, one by an *iso*-butyl group and the other by an allyl group. Sandoptal resembles Dial (*di*-allyl barbituric acid) and Neonal (*n*-butylethyl barbituric acid) somewhat, in that one of the allyl groups and the *n*-butyl group of the former and the latter, respectively, have been replaced by an *iso*-butyl group. Furthermore, Sandoptal differs from another barbituric acid derivative, Pernoston (*sec.*-butyl-β-bromallyl barbituric acid) in that it contains an *iso*-primary butyl (2-methyl propyl-1) instead of a secondary butyl (butyl-2) group. (Sandoptal was under consideration, but had not been finally acted on by the Council on Pharmacy and Chemistry, March 1, 1931.)

When there are so many compounds of similar nature, it is necessary to have rigorous standards and tests. All the products described here have been examined in the Chemical Laboratory of the American Medical Association, and standards for those which have been found acceptable appear in New and Nonofficial Remedies.[18]

No attempt has been made to mention (in such a brief and relatively nontechnical review) the large number of chemists who have worked in recent years on the malonylureas (barbituric acids). These chemical studies contain much of value to those interested in the technical aspect. References may be found in *Chemical Abstracts*.

Finally, in order that the reader may easily visualize the relationship of the barbitals, a chart is presented herewith showing the structural differences and their respective melting points. It will be noted that the compounds, chemically speaking, are probably more closely related than any other large group of essentially similar pharmaceuticals.

AS THE CHEMIST SEES BARBITAL COMPOUNDS



The preparations indicated by a star do *not* stand acceptable by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies—March 1, 1931. If other than official preparations are desired, physicians who follow the Council should limit their prescriptions to N. N. R. preparations.

18. Proponal, dipropyl barbituric acid [also known as Propytal] (Merck & Co., Inc.) and Rutonal (H. Société Parisienne d'Expansion Chimique, Paris) phenlymethyl barbituric acid, are two other barbituric acid derivatives which are better known in continental Europe. (These two have not been examined by the A. M. A. Chemical Laboratory.)

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, Secretary.

DIPHTHERIA IMMUNITY TEST (SCHICK TEST) (See New and Nonofficial Remedies, 1930, p. 380).

Lederle Laboratories, Inc., Pearl River, N. Y.

Diphtheria Toxin for Schick Test in Peptone Solution.—A diphtheria toxin made by growing diphtheria bacilli in broth, ageing, and diluting with peptone solution according to W. E. Bunney (*J. Immunol.* **20:** 71, 1931). The product is ready for use, no diluent being required. The diluted toxin is of such strength that 0.1 cc. (one dose) given intracutaneously constitutes one-fiftieth minimum lethal dose for a guinea-pig of 250 Gm. weight. Marketed in packages of one syringe containing diluted diphtheria toxin sufficient for one test and in packages of one vial containing diluted diphtheria toxin sufficient for ten tests. As a means of control, diphtheria toxin heated to 75 C. for ten minutes and diluted with peptone solution is supplied in packages of one syringe containing sufficient material for one control test and in packages of one vial containing sufficient material for ten control tests.

POLLEN ALLERGEN SOLUTIONS-SQUIBB (See New and Nonofficial Remedies, 1930, p. 27; THE JOURNAL, Dec. 20, 1930, p. 1913).

The following product, marketed in 5 cc. vials, has been accepted:

Cottonwood Pollen Allergen Solution-Squibb.

The following product, marketed in 5 cc. vials, in treatment set packages A, B, C and D, and in three vial treatment packages, has been accepted:

Grasses Combined Pollen Allergen Solutions-Squibb (Bermuda Grass, June Grass, Orchard Grass, Red Top, and Timothy, in equal parts).

Prepared by the method given for pollen allergen solutions-Squibb (New and Nonofficial Remedies, 1930, p. 27).

COMMITTEE ON FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COMMITTEE ON FOODS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

MERRELL-SOULE POWDERED PROTEIN MILK (BOILABLE)

(Higher in Protein and Mineral Salts, Lower in Lactose than Dry Whole Milk. Slightly Acid.)

Manufacturer.—The Merrell-Soule Company, Inc., subsidiary of the Borden Company, New York City.

Description.—A powdered food made from milk; higher in protein and mineral salts, lower in lactose than dry whole milk. It is only slightly acid.

Manufacture.—The whole milk used is obtained from inspected cattle and fulfils the requirements of the New York State Health Department. The dairies are regularly inspected by the company's inspectors. The milk as received is subject to chemical and bacteriologic control. Bacteria plate counts are made on deliveries from individual dairies. Dairies registering a high count are investigated and unsatisfactory conditions are corrected.

The milk is heated to 190 F. for ten minutes, cooled to 100 F., conveyed to glass lined tanks, and 22.5 per cent U. S. P. lactic acid solution is slowly added with agitation. After the milk curd has settled, part of the whey is removed. This whey is replaced with pure water, U. S. P. lactic acid is added, and the foregoing procedure is repeated with further removal of whey.

The batch is now mixed, partially neutralized with filtered calcium hydroxide solution and then the acidity is further reduced with sodium hydroxide to an acidity of 0.06-0.08 per cent expressed as lactic acid. The mixture is condensed under reduced pressure, pasteurized at 145 F. for thirty minutes, and finally dried by the spray process by forcing under high pressure through small apertures into a tin lined chamber maintained at 165-170 F. After certain control laboratory tests, it is canned.

Chemical Composition.—

(proximate analysis)	per cent
Moisture	3.0
Ash (minerals)	9.25
Protein (N × 6.38)	37.0
Fat (ether extract)	27.0
Milk sugar	23.0
Acidity, as lactic acid	0.75

Calories.— 4.83 per gram
137.2 per ounce

Micro-Organisms. — The pasteurization conduces to the destruction of pathogenic organisms. Routine laboratory bacteriologic tests are made on all batches, and any suspicious colonies are examined for presence of hemolytic and green-producing streptococci.

Claims of Manufacturer.—Recommended for infant feeding: 1. For indications the same as for standard protein milk. 2. For dyspepsia, milder diarrheas, and fermentative diarrhea.

The milk used for preparing this product is carefully pasteurized and guaranteed not to contain any pathogenic organisms. The reliquefied product may be boiled without curdling.

JERRY'S KEW-BEE BREAD

Manufacturer.—Jerry's Bakery Company, Terre Haute, Ind.

Description.—A white bread made by the sponge dough method.

Manufacture.—The sponge dough ingredients, 70 per cent patent flours of Northwest and Southwest wheats, water, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate are mixed in a high speed mixer. The sponge dough is fermented for from four to five hours, after which are added flour, water, salt, sugar, lard and sweetened skimmed milk to make the completed dough, which is cut into pieces of desired weight by machine. The pieces are fermented for a short time, molded by machine into loaf form, and panned. The panned dough is further fermented and then baked for from thirty to thirty-five minutes in an oven equipped with pyrometer for temperature control. The cooled loaves are wrapped in wax-paper.

The factory, equipment and storage rooms are kept in strictly sanitary condition.

Chemical Composition.—

(proximate analysis)	per cent
Moisture (entire loaf)	37.4
Ash	1.79
Fat (ether extract)	2.9
Protein (N × 6.25)	9.2
Crude fiber	0.3
Carbohydrates (by difference) other than crude fiber	48.4

Calories.— 2.57 per gram
73.0 per ounce

Claims of Manufacturer.—An excellent wholesome bread.

PAGE EVAPORATED MILK (STERILIZED, UNSWEETENED)

Manufacturer.—The Page Milk Company, Merrill, Wis.

Description.—An unsweetened evaporated milk.

Manufacture.—Only strictly sweet fresh milk of healthy herds and from sanitary farms regularly inspected by the company is used. On arrival at the plant, it is cooled and stored in holding tanks.

In the preparation for processing the milk is first brought to a temperature of from 205 to 210 F. in tubular heaters. The heated milk is concentrated in "vacuum pans" at 130 F. to a definite specific gravity. The concentrated milk is homogenized by forcing under high pressure through small apertures, which disperses the fat in fine globules which later will not separate out. The homogenized milk is standardized under laboratory supervision to conform to the United States Department of Agriculture standard for evaporated milk.

The standardized milk passes from the filling machines into the cans through small openings which are automatically sealed.

The sealed filled cans are brought to 210 F. for from fifteen to twenty minutes and are then processed in a pressure cooker at from 240 to 248 F. for fifteen minutes, after which the cans are quickly cooled.

The factory is maintained in a strictly sanitary condition. The equipment is regularly cleaned with brushes and washing solution.

Chemical Composition.—

(proximate analysis)	per cent
Total solids	25.5—26.5
Ash	1.5— 1.6
Protein (N × 6.38)	7.0— 8.2
Fat (ether extract)	7.9— 8.2
Lactose	9.5—10.0

Calories.— 1.36 per gram
38.6 per ounce

Micro-Organisms.—The product is sterile.

Claims of Manufacturer.—Page Brand Evaporated Milk is a safe product for baby feeding and all other uses of ordinary milk. A mixture of one part water and one part evaporated milk corresponds to the legal standard for whole milk.

VERMONT MAID BREAD

Manufacturer.—Vermont Baking Company, White River Junction, Vt.

Description.—A white bread made by the sponge dough method.

Manufacture.—The sponge dough ingredients, 70 per cent patent flours of Northwest and Southwest wheats, water, yeast, malt syrup and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate are mixed in a high speed mixer. The sponge dough is fermented for from four to five hours, after which are added flour, water, dry skim milk, salt, dextrose, lard and a partially hydrolyzed starch to make the completed dough, which is cut into pieces of desired weight by machine. The pieces are fermented for a short time, molded by machine into loaf form, and panned. The panned dough is further fermented and then baked for from thirty to thirty-five minutes in a hearth oven equipped with thermometer and steam jets to control temperature and humidity. The cooled loaves are wrapped in waxpaper.

The factory, equipment and storage rooms are kept in strictly sanitary condition.

Chemical Composition.—

(proximate analysis)	per cent
Moisture (entire loaf)	36.9
Ash	1.68
Fat (ether extract)	2.7
Protein (N × 6.25)	9.5
Crude fiber	0.3
Carbohydrates (by difference) other than crude fiber	49.0

Calories.— 2.58 per gram
73.3 per ounce

Claims of Manufacturer.—An excellent wholesome bread.

STALEY'S GOLDEN TABLE SYRUP

A Savory Blend of Pure Corn Syrup and Choice Refiners' Syrup

Manufacturer.—A. E. Staley Manufacturing Company, Decatur, Ill.

Description.—A table syrup; a corn syrup base (glucose) flavored with choice refiners' syrup.

Manufacture.—The product is a mixture of corn syrup (glucose) and choice refiners' syrup, the corn syrup being in much the greater proportion.

The refiners' syrup is the residual noncrystallizable liquor remaining after crystallizing out of sucrose in the refining of that sugar and is obtained from sugar refineries. It is selected on flavor and color and fulfils the U. S. Department of Agriculture standard for that product.

The corn syrup is manufactured from high grade corn-starch. The corn-starch is boiled in open tanks with a very dilute solution of hydrochloric acid. The mixture is transferred to pressure kettles, where the conversion is continued under 35 pounds pressure. The conversion is stopped when tests indicate that the desired stage of the conversion is reached. The liquor is released into tanks and neutralized with sodium bicarbonate. The neutralization is very carefully carried to just on the acid side of true neutrality. The neutralized syrup is filtered through filter cloths. The filtrate is decolorized and deodorized by passing through charred bone or animal charcoal. The resulting liquid is water white and odorless and tests 30° Baume. The clear liquid is concentrated in "vacuum pans" to the desired density of about 40° Baume (100 F.).

The two types of syrup are blended together in mixing pans and heated to 180 F. for one hour. The mixture is filtered, filled into friction top cans at a temperature of 160 F. or higher, and immediately capped.

Chemical Composition.—

(proximate analysis)	per cent
Moisture	25.0
Ash	0.59
Fat (ether extract)	0.0
Protein (N × 6.25)	0.2
Reducing sugars as dextrose before inversion	33.1
Sucrose	4.0
Dextrin	38.6
Titratable acidity as HCl	0.033
Sulphur dioxide, as SO_2	less than 0.003

Calories.— 3.04 per gram
86.3 per ounce

Claims of Manufacturer.—Staley's Golden Syrup is for cooking and table use and is recommended for modification of milk for infant feeding. It is pure and uniform.

STALEY'S CRYSTAL WHITE SYRUP

A Savory Blend of Pure Corn Syrup, Granulated Sugar Syrup and Vanilla

Manufacturer.—A. E. Staley Manufacturing Company, Decatur, Ill.

Description.—A table syrup; a corn syrup base (glucose) and sucrose flavored with vanilla extract.

Manufacture.—The product is a mixture of corn syrup (glucose) and sucrose syrup, the former being in much the greater proportion. The mixture is flavored with vanilla extract.

The corn syrup is manufactured from high grade corn starch. The corn starch is boiled in open tanks with a very dilute solution of hydrochloric acid. The mixture is transferred to pressure kettles where the conversion is continued under 35 pounds pressure. The conversion is stopped when tests indicate that the desired stage of the conversion is reached. The liquor is released into tanks and neutralized with sodium bicarbonate. The neutralization is very carefully carried to just on the acid side of true neutrality. The neutralized syrup is filtered through filter cloths. The filtrate is decolorized and deodorized by passing through charred bone or animal charcoal. The resulting liquid is water white and odorless and tests 30° Baume. The clear liquid is concentrated in "vacuum pans" to the desired density of about 40° Baume (100 F.).

The corn syrup, a sucrose syrup of sucrose and water, and vanilla extract are mixed together in mixing pans and heated to 160 F. or higher. The mixture is filtered, filled into friction top cans at a temperature of 160 F. or higher, and immediately capped.

Chemical Composition.—

(proximate analysis)	per cent
Moisture	25.0
Ash	0.34
Fat (ether extract)	0.0
Protein (N × 6.25)	0.2
Reducing sugars as dextrose before inversion	29.2
Sucrose	5.8
Dextrin	39.6
Titratable acidity as HCl	0.010
Sulphur dioxide as SO_2	less than 0.003

Calories.— 2.99 per gram
84.9 per ounce

Claims of Manufacturer.—Staley's Crystal White Syrup is for cooking and table use and is recommended for modification of milk for infant feeding. It is pure and uniform.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 30, 1931

A VETO ON PROPHYLAXIS FOR OPHTHALMIA NEONATORUM

After Attorney General Carlstrom of Illinois rendered an opinion that the state has no authority to compel the instillation of silver nitrate or some equally effective prophylactic into the eyes of babies at birth to prevent ophthalmia neonatorum and consequent blindness, Governor Louis L. Emmerson of Illinois vetoed a bill [1] which had passed both the house and the senate. The house passed the bill over his veto, but, by a margin of a few votes under the two thirds required, the senate sustained the veto. Since 1915, Illinois has recognized the danger of this disease and has required physicians and midwives to report cases and to inform parents of the dangers.[2] It has required physicians to advise the use of a prophylactic and authorized gratuitous distribution. These requirements have not accomplished the purpose. Otherwise the new legislation now under consideration would not have been introduced. If the attorney general is correct, the constitution of the United States or of the state of Illinois guarantees to parents the right to condemn their babies to blindness and dependence and will continue to force the taxpayers of the state to bear the additional burden of education of these unfortunates. But the attorney general is not correct and the governor should not have permitted expediency or the rabid utterances of antimedical fanatics to dictate his action on a measure now effective in a majority of states.

Five states, said Attorney General Carlstrom, "have adopted acts substantially the same as the amendatory Act here presented, except that some of them are limited to certain institutions or persons in attendance, and in one, such treatment is subject to objection by the parents." The fact is, however, that twenty-eight states have enacted such legislation. Alabama, Delaware, Georgia, Iowa, Idaho, Kansas, Michigan, Missouri, Nevada, Nebraska, New Hampshire, North Carolina, Rhode Island, Tennessee, Texas, Virginia, West Virginia and Wisconsin have enacted laws that require unconditionally the instillation of prophylactics into the eyes of new-born babies. Connecticut, Indiana, Maine, Mississippi, North Dakota, Ohio, Oklahoma, South Dakota, Utah and Wyoming have enacted similar statutes, requiring the instillation of prophylactics under certain conditions. In other states, the instillation of prophylactics is required by regulations. Such statutes and regulations have been in force for many years. A search of the reported decisions of federal and state appellate courts fails to disclose even one case in which the constitutionality of such legislation has been called into question.

Legislation requiring the instillation of prophylactics into the eyes of new-born babies to prevent blindness does not interfere with the rights of parents and children any more than does compulsory vaccination—probably not as much. The Supreme Court of the United States and the supreme courts of many states have repeatedly upheld the right of a state to enact and enforce laws for compulsory vaccination. The Supreme Court of the United States said:

> "The defendant insists that his liberty is invaded when the state subjects him to fine or imprisonment for neglecting or refusing to submit to vaccination; that a compulsory vaccination law is unreasonable, arbitrary, and oppressive, and, therefore, hostile to the inherent right of every freeman to care for his own body and health in such way as to him seems best; and that the execution of such a law against one who objects to vaccination, no matter for what reason, is nothing short of an assault upon his person. But the liberty secured by the Constitution of the United States to every person within its jurisdiction does not import an absolute right in each person to be, at all times and in all circumstances, wholly freed from restraint. There are manifold restraints to which every person is necessarily subject for the common good. On any other basis organized society could not exist with safety to its members. Society based on the rule that each one is a law unto himself would soon be confronted with disorder and anarchy. Real liberty for all could not exist under the operation of a principle which recognizes the right of each individual person to use his own, whether in respect of his person or his property, regardless of the injury that may be done to others. This court has more than once recognized it as a fundamental principle that 'persons and property are subjected to all kinds of restraints and burdens in order to secure the general comfort, health, and prosperity of the state; of the perfect right of the legislature to do which no question ever was, or upon acknowledged general principles ever can be, made, so far as natural persons are concerned'."—*Jacobson v. Massachusetts, 197 U. S. 11.*

In passing on the constitutionality of legislation providing for compulsory vaccination, the United States Supreme Court pointed out the principles involved:

> "We must assume that, when the statute in question was passed, the legislature of Massachusetts was not unaware of these opposing theories, and was compelled, of necessity, to choose between them. It was not compelled to commit a matter involving the public health and safety to the final decision of a court or jury. It is no part of the function of a court or a jury to determine which one of two modes was likely to be the most effective for the protection of the public against disease. That was for the legislative department to determine in the light of all the information it had or could obtain. It could

1. H. 67, A Bill for an act to amend sections 3 and 8 of "An Act for the prevention of blindness and ophthalmia neonatorum; defining ophthalmia neonatorum; designating certain powers and duties; and otherwise providing for the enforcement of this act," approved June 24, 1915.

2. L. 1915, p. 366. An Act for the Prevention of Blindness from Ophthalmia Neonatorum, etc.

not properly abdicate its function to guard the public health and safety. The state legislature proceeded upon the theory which recognized vaccination as at least an effective, if not the best-known, way in which to meet and suppress the evils of a smallpox epidemic that imperiled an entire population. Upon what sound principles as to the relations existing between the different departments of government can the court review this action of the legislature? If there is any such power in the judiciary to review legislative action in respect of a matter affecting the general welfare, it can only be when that which the legislature has done comes within the rule that, if a statute purporting to have been enacted to protect the public health, the public morals, or the public safety, has no real or substantial relation to those objects, or is, beyond all question, a plain, palpable invasion of rights secured by the fundamental law, it is the duty of the courts to so adjudge, and thereby give effect to the Constitution." *Ibid.*

Nowhere in the course of his opinion has Attorney General Carlstrom undertaken to show that the proposed compulsory instillation of prophylactics into the eyes of new-born babies to prevent blindness is without real or substantial relation to that object or that it is an invasion of rights secured by the fundamental law. The advisability of enacting the proposed legislation was, therefore, a matter to be determined by the legislature, not by the attorney general or even by the courts.

Certainly the interference with the rights of the individual incident to such prophylaxis against blindness is not as great as that enforced by laws which authorize compulsory eugenic sterilization. The right of a state to compel such sterilization has been affirmed by the United States Supreme Court in unmistakable language:

"We have seen more than once that the public welfare may call upon the best citizens for their lives. It would be strange if it could not call upon those who already sap the strength of the State for these lesser sacrifices, often not felt to be such by those concerned, in order to prevent our being swamped with incompetence. It is better for all the world, if instead of waiting to execute degenerate offspring for crime, or to let them starve for their imbecility, society can prevent those who are manifestly unfit from continuing their kind. The principle that sustains compulsory vaccination is broad enough to cover cutting the Fallopian tubes. *Jacobson* v. *Massachusetts*, 197 U. S. 11."—*Buck v. Bell, 274 U. S. 200.*

The attorney general cited in support of his opinion decisions by Illinois appellate courts in which it was held that state and local health authorities cannot compel the exclusion of unvaccinated pupils from schools in the absence of some immediate present necessity. These decisions are obviously not in point. What a department of the executive branch of the government can and cannot lawfully do under the statutes under which it operates is not a criterion of what the state itself may do, limited as it is only by the federal and state constitutions.

Available figures show that, during the period within which prophylactic measures have come into increasingly common use, infantile blindness has diminished much more rapidly than blindness from other causes. Twenty-eight per cent of the persons newly admitted to schools for the blind in the United States in 1907 attributed their blindness to ophthalmia neonatorum. During the following five years, 1908-1912, the percentage had fallen to 23. In the next quinquennium it fell to 19. In the next it fell to 16. In the quinquennium 1923-1927, it was only 12 per cent. During the next three years, 1928-1930, the percentage of admissions attributable primarily to ophthalmia neonatorum was only 9. This decrease in the percentage of admissions of persons who had lost their eyesight as the result of ophthalmia neonatorum has been largely, if not altogether, due to the instillation of prophylactics into the eyes of babies at birth, either voluntarily or under the compulsion of law.

The bill just vetoed by the governor of Illinois would have prevented blindness in a vast number of infants who may now pass through life in darkness. It is well known that terrific pressure was brought to bear on the governor by antimedical agencies, including particularly the Christian scientists and the peculiar cultists who associate themselves with the Christian scientists in their antimedical attacks. Even the headquarters in Boston was brought into the picture to influence authorities in Illinois.

If the governor was convinced of the value of the measure, he did not need to call on the attorney general to determine its constitutionality; he could have signed the measure and left it to the courts. The fact that the house and the senate had passed the measure, the fact that the house passed it over his veto, and the fact that the senate barely failed to pass it over his veto, are an indication of the desire of the representatives of the vast majority of the people in this connection. Apparently the people no longer rule. The vetoing of this bill must be looked on as a tragedy.

INTRA-AURICULAR PUNCTURE

Sudden cessation of the heart-beat without pathologic conditions affecting the tissue of the heart may occur in the practice of any surgeon. Attempts to resuscitate the heart by manipulation have been practiced for at least seventy-five years. When the accident occurs during an abdominal operation, the surgeon may attempt to massage the heart by direct pressure on the diaphragm or by indirect cardiac massage through pressure over the precordia. Hyman,[1] in a recent review of the subject, notes the case of Condorelli, who kept the heart beating for more than two hours by merely thumping on the precordia. The impossibility of continuing this procedure resulted in the death of the patient. In late years, resuscitation of the accidentally stopped heart by the injection of epinephrine or other solutions has been dramatized in the newspapers and hailed as a miracle of science. Many medical writers consider the procedure useless and dangerous in spite of the fact that the operation seems to have been successful in some cases.

1. Hyman, A. S.: Resuscitation of the Stopped Heart by Intracardiac Therapy, Arch. Int. Med. 46: 553 (Oct.) 1930.

Physiologists maintain that eight minutes is the maximum time that can elapse after the heart stops before irreparable damage occurs in some brain centers. Much longer periods of time have been reported, however, as elapsing before the heart has been successfully resuscitated by the injection method. Hyman reports the case of a man whose heart stopped while on the operating table but who was promptly resuscitated by the injection of epinephrine after eleven minutes, also the case of a child whose heart stopped during a tonsillectomy but who was resuscitated fourteen minutes after apparent death by the injection of metrazol (pentamethylenetetrazol). Truzzi reported a case in which a man, aged 70, was effectively treated by an intracardiac injection more than half an hour after the heart apparently had stopped beating. Success cannot be expected in all cases of accidental stoppage of the heart although, if the procedure is performed as suggested by Hyman, a favorable outcome may ensue in cases in which the patient might otherwise have died. Hearts in which cardiac arrest has occurred were divided by Meyer into two groups: (1) the healthy asystolic heart and (2) the heart in acute or chronic disease. Intracardiac injection should be more effective in the first group, which includes hearts that stop under anesthesia or as the result of shock, accidents, narcosis, injuries and collapse. In the second group, in which favorable results probably will occur less frequently, may be placed hearts damaged by myocarditis, hyperthyroidism, arteriosclerosis, acute infectious diseases and nephrosis. Not all of the success that has been attained by this procedure in recent years has been due to the use of epinephrine. Many other drugs have been used. Bolton is said to have been successful with the intracardiac injection of ether; Bianchetti was enthusiastic about the injection of small amounts of caffeine; dextrose was used by Imerman, and sodium thiosulphate by Zimman. Camphor, digitalis, strophanthin, strychnine and other drugs have been used, and Vogt seemed to believe that all of them are more or less valuable for resuscitation of the asystolic heart. Indeed, the wide variety of substances used suggests that the response of the heart may not be due to any specific action of the drug. The mechanical stimulation made by the puncture wound of the injecting needle may become a focus of increased irritability from which a stimulus for myocardial contraction develops.

The first contractions of the resuscitated heart are always extrasystoles, in which arrhythmia may persist and be followed by fatigue of the ventricles and then by ventricular fibrillation, a hazardous disturbance. This explains the secondary collapse that sometimes occurs after the heart has been resuscitated. Hyman therefore suggests that the puncture be made into the right auricle instead of into the ventricles, as is now practiced. The auricles are more responsive to mechanical stimulation and the area reached by the needle generally is near the sinus node, whence extrasystoles would spread over more normal pathways than from any other location. Intra-auricular puncture, which is no more difficult, is performed by inserting into the third interspace at the right sternal margin a slightly curved needle and directing the point downward and toward the median line. In children the distance to the right auricle is 2 inches or less, and in adults 4 inches or less. The danger of injuring the larger vessels in this area is not great, for they lie above and below this point.

This procedure is a refinement in the resuscitation of the stopped asystolic heart, which is based on physiologic principles. The advantages seem obvious. Physicians should study the method of intra-auricular puncture. They should be able to perform it skilfully and quickly when emergencies occur in which the operation may be indicated.

VITAMIN WITTICISMS

Students of vitamins are being made to feel nowadays the gaff of the humorist. Skepticism is a wholesome attitude when it is adopted by a scientific investigator; it makes him demand cogent evidence and rigorous proof for all the hypotheses or claims that may be brought to his attention. The scientific skeptic, if he is true to type, is also open-minded. His proper reaction is that of forming an opinion or formulating a judgment, rather than merely "changing his mind." The scoffer is all too often quite indifferent to the rigorous demands of logic. Two decades ago the scoffers cried that "what we need in this country is food, not calories." When, a few years later, it became likely that food would win a war and that calory-yielding foods were "fuel for the fighters," the humorist failed to find an appropriate theme in the calory concept.

Today the vitamin hypothesis supplies a profitable theme for the columnist. He demands more evidence for the existence of the postulated food potencies. If they are real, why don't the chemists exhibit them, as they do salt and sugar? Such frivolous presentations of scientifically serious subjects have some wholesome aspects. The vitamin hypothesis, which still presents analogies with magic because it represents the unusual or unexpected in routine experience, has become something for the false publicity seeker and the food faker to conjure with. Vitamins have become the vague talking-points in the promotion of cure-alls and panaceas for health. Furthermore, modern advertising has all too often presented a dire picture of vitamin starvation among the population and has ventured to arouse the fear of untoward consequences unless immediate steps are taken to supply the lacking essential. One might almost conclude, after reading some of the billboards or newspaper columns, that America is the home of a nation living exclusively on polished rice or corn starch

or gelatin or olive oil. Hence salvation is to be acquired only through the purchase of this or that proprietary vitamin preparation. The pictured cure is as dramatic as are the actual experiments with animals existing on such extremely one-sided diets. Fortunately the average American diet affords little justification for the assumption of widespread starvation with respect to any dietary requisite.

The ridicule of the vitamins as the *pièces de résistance* of an appetizing *carte du jour* is therefore entitled to some credit as a part of a wholesome propaganda for reform. Ridicule and satire have often brought about a return to sanity of outlook in persons carried away by some insidious nonsense. Unfortunately there always remains the danger that the pendulum of corrective effort will swing too far in the direction of reform before it returns to the equilibrium of sound common sense. The mystery of the vitamins—which, by the way, is gradually being unraveled—should no longer be permitted to obscure their real therapeutic possibilities. The prejudices that many physicians have developed against the almost inevitable overenthusiasm for a new discovery should not prevent them from recognizing and appreciating the real fields for vitamin therapy. The indications are becoming clearer, the possibilities less nebulous, each year.

An interesting illustration of the importance of a tolerant and receptive attitude has just been presented from the Mayo Clinic by Eusterman and O'Leary.[1] They have reported a series of cases in which pellagra has been secondary to some interference with proper alimentation. The majority were the result of malignant or benign obstructing lesions of the upper part of the digestive tract as well as of unsuccessful or unwarranted operative procedures provoking marked motor or secretory dysfunction or both. Cases of obstruction usually require surgical intervention unless the condition is obviously inoperable. However, the risk is greatly enhanced, as Eusterman and O'Leary point out, especially in cases in which malignant growths are present or in cases with high grade obstruction of whatever nature, because adequate preoperative preparation to combat malnutrition, dehydration and alkalemia, so essential to recovery, is extremely difficult in the presence of complicating pellagra. The latter is now widely assumed to be a deficiency disorder—perhaps, rather, a syndrome of varied dietary deficiency defects. Such a view is supported by the existence of secondary pellagra as just described. Xerophthalmia, a characteristic of vitamin A deficiency, also has been described in man as secondary to the inability to digest and absorb the usual food ingredients in sufficient quantity. Relief or preparation for operation should obviously be enhanced in such cases by attempts at some form of rational vitamin therapy. The possibilities of parenteral introduction of vitamins loom up. This means that safe, effective preparations must be made available. The effectiveness of subcutaneous and even intravenous injections of certain vitamins has already been demonstrated experimentally. The problem is not restricted to pellagra. Other conditions in which the assimilation of food has been disturbed for some cause or in which unsatisfactory food habits have been developed present possibilities that may now be reckoned with in the light of our knowledge of the much derided vitamins.[2]

1. Eusterman, G. B., and O'Leary, P. A.: Pellagra Secondary to Benign and Carcinomatous Lesions and Dysfunction of the Gastro-Intestinal Tract, Arch. Int. Med. **47**: 633 (April) 1931.

2. An elaborate review has just been published by Sherman, H. C., and Smith, S. L.: The Vitamines, ed. 2, New York, Chemical Catalog Company, 1931.

Current Comment

LOSS OF BODY CHLORIDE

Total loss of gastric juice tends to be fatal to the organism.[3] Is this effect due to loss of chloride, enzymes or some unrecognized potency of this body fluid? If due to loss of chloride, can this deficiency be remedied by administration of salt solution either parenterally or distal to the stomach in the intestine? The chloride of the food can at will be increased to extreme concentrations or reduced to the small amount occurring naturally in foods, without further effect than a parallel variation in the chloride content of the urine. However, the important rôle of chlorides in the maintenance of osmotic pressure of body fluids, in the acid-base balance and in the transport of carbon dioxide in the blood indicates that a severe loss of this constituent to the organism might well be fatal. Indeed, the efficiency of salt solution in alleviating the symptoms due to dehydration and in combating the alkalosis following persistent vomiting points not only to the necessity of maintaining the physiologic level of chloride but also to the damage resulting from the loss of it. Recent studies of Scott, Holinger and Ivy[4] indicate further that the chloride appearing in the gastric juice is indispensable to the body aside from the part it plays in digestion. A pouch of the entire stomach was made and all the gastric juice was drained to the outside. Through a jejunal fistula, a bland mixture consisting of milk, flour, sugar and peptone was given at frequent intervals. In addition, the necessary vitamins and also from 6 to 10 Gm. of salt were fed daily. The authors state that for sixteen weeks the experimental animal had lost all its gastric juice (from 400 to 600 cc. daily) but in spite of this fact the body weight was the same as that before the operation. Furthermore, the level of blood chloride could be varied at will by adding to or withdrawing salt from the food given. Instead of the usual natural internal circulation of chloride there was here provided an artificial external circulation. These observations constitute further evidence that, in the fatal effects of loss of gastric juice, the consequent withdrawal of chloride from the body plays no inconsiderable part.

3. Dragstedt, L. R., and Ellis, J. C.: Am. J. Physiol. **93**: 407 (June) 1930.

4. Scott, H. G.; Holinger, P. H., and Ivy, A. C.: Proc. Soc. Exper. Biol. & Med. **28**: 569, 1931.

Association News

CONTRIBUTIONS FOR MEDICAL SALON IN PERSHING HALL

The sum contributed this week for the Pershing Memorial in Paris brings the total to $2,391.60. A list of those who have contributed during the current week follows:

D. M. F. Krogh, M.D., Philadelphia
Charles S. White, M.D., Washington, D. C.
Charles W. Hughes, M.D., Hines, Ill.
Harry B. Fralic, M.D., Fort Snelling, Minn.
Claude C. Keeler, M.D., Fort Snelling, Minn.

The following members of the Ross General Hospital staff, Ross, Calif., have also contributed:

J. H. Kuser, M.D.
F. M. Cannon, M.D.
C. W. Clark, M.D.
R. G. Dufficy, M.D.
M. S. Edgar, M.D.
H. O. Hund, M.D.
G. M. Landrock, M.D.
A. H. Mays, M.D.
L. L. Robinson, M.D.
Oliver Knapp, M.D.
M. W. Harris, M.D.
G. H. Willcutt, M.D.
M. R. Allen, M.D.
J. O. Hawkins, M.D.

THE PHILADELPHIA SESSION

The Scientific Exhibit

Admission to the Scientific Exhibit will be extended only to those who have official badges or admission cards. For the benefit of the local nurses and technicians who desire to see the Scientific Exhibit, admission cards are available. These will be good only for the person in whose name the card is issued and good only on the day stated. In order to obviate a peak attendance on any one day, it is requested that nearby hospitals whose nurses expect to attend the Scientific Exhibit forward their request for admission cards *immediately* to the Director of the Scientific Exhibit, 535 North Dearborn Street, Chicago. These requests should contain:

1. The name of the nurse to whom the card is to be issued.
2. The day of the week on which she wishes to attend.

After June 6, cards of admission may be secured from the Office of the Committee on Scientific Exhibit, Space 704 Municipal Auditorium, Philadelphia.

Only one card will be issued to each person.

Fraternity Dinner

The Alpha Epsilon Iota women's medical fraternity will have a dinner at the Warburton House, 7 p. m., Wednesday, June 10.

Alumni Smoker

The Medical Alumni Association of the Medico-Chirurgical College will have its Smoker at the Hotel Rittenhouse from 9 p. m. to 12 p. m., Wednesday, June 10.

Veterans' Luncheon

The Medical Veterans of the World War are reminded that their meeting and luncheon will take place at 12:30 p. m., Tuesday, June 9, in the Clover Room of the Bellevue-Stratford Hotel. Reservations for seats for the luncheon with a check for $3 should be sent to Dr. Charles F. Mitchell, 2003 Pine Street, Philadelphia.

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts at 10 a. m. on Monday and 10:30 on Saturday, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week is as follows:

June 1. Eyes for Ears.
June 6. Helping the Handicapped Deaf.

Five minute health talks may be heard over the Columbia Broadcasting System on Monday, Wednesday, Thursday and Saturday, from 1 to 1:05 p. m., daylight saving time.

The program for the week is as follows:

June 1. Deafness and Character.
June 3. Give the Deafened Man a Chance.
June 4. How to Be Helpful to the Hard of Hearing.
June 6. The Runabout Child and His Hearing.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE AND HOSPITALS

Twenty-Seventh Annual Meeting, held in Chicago, Feb. 16, 17 and 18, 1931

(Continued from page 1802)

DR. MERRITTE W. IRELAND, Washington, D. C., in the Chair

JOINT SESSION OF THE AMERICAN CONFERENCE ON HOSPITAL SERVICE AND THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION

FEBRUARY 18—AFTERNOON

Convalescent Care and Rehabilitation

E. H. LEWINSKI CORWIN, PH.D., New York: The first necessity of a convalescent hospital according to Florence Nightingale is that it should not be like a hospital at all, and the very best kind of convalescent hospital would be a string of cottages. The reason, she said, is: 1. To get rid of the idea of being in a hospital altogether from the minds of the inmates, and to substitute for it that of home. 2. To secure a more free and bracing atmosphere than can ever be secured in any building containing a larger number of inmates. 3. Because cottages may be more slightly built and therefore are less expensive than large, complicated, solid buildings. 4. Because in the point of view of moral discipline it is yet more important to separate men from women among convalescents than among the sick.

All rules against curtains, against washing in the dormitory, etc., which must be maintained in hospitals, may be relaxed. It should be a home. The number of beds for each ward should not exceed six nor be less than three. In a convalescent home, the more the patients are occupied, the better. The men who are able should be employed in the garden. The women who are able should do nearly all the household work, at least on their own side. This must be done in subordination to the necessity of giving the convalescents constant fresh air, and as much as possible outdoors, it is almost needless to say. Some convalescents will want entire rest; and this, with fresh air and good food, will be the main element of their recovery. These fundamental ideas expressed by Florence Nightingale three quarters of a century ago, are applicable today.

Definite medical opinion is an essential prerequisite in gaging the convalescent needs of a community and is indispensable in planning, equipping and staffing the homes. Who except the medical profession is to give the required guidance and direction? This guidance has to be based on a thorough analysis of requirements and the best methods of meeting these.

The provision of adequate convalescent care is not as simple as it may seem. Patients must be differentiated on the basis of their particular requirements. Those convalescing from active heart disease, pneumonia or nephritis require a different regimen from those who are recovering from fractures, burns or a goiter operation. The diets, mode of life and manner of exercise should be different. Some of the convalescents require massage, mechanotherapy or ultraviolet baths. In others, some of these therapeutic or restorative measures are decidedly contraindicated. What types of patients shall the convalescent homes admit? Which shall be segregated by themselves? On the average, the medical patients fall roughly in four categories: the cardiovascular constitute 20 per cent; the respiratory, 45 per cent; the dietetic, 18 per cent, and the remainder, 17 per cent.

The Committee on Public Health Relations of the New York Academy of Medicine was, so far as I know, the first medical body to formulate certain preliminary and tentative rules concerning the types of patients suitable for convalescent homes, and to indicate the type of organization, equipment and supervision which the homes admitting certain categories of patients should adopt. These tentative standards of five years ago should be reconsidered by a national medical body, tested and modified if changes be indicated, and then a period of study should follow by well qualified scientists, relative to the physiology

and psychology of convalescence from certain major types of conditions.

At present there are but four major classes of patients to whom "rehabilitation" is being applied on a well established basis, and these are the tuberculous, the cardiac, the mentally deranged and the cripples. At the Buffalo City Hospital, a municipal hospital with almost a thousand beds, there is an educational department within the hospital. All convalescent patients are reported to be required to register with the educational department for bookwork, for handwork or for both. Fifty per cent of the hospital patients are enrolled as pupils. The city department of education supplies teachers and the Buffalo Public Library has installed a branch library at the hospital. The convalescent homes share with our outpatient departments the unique opportunity, which they often neglect, of inculcating rational living habits in their patients. The convalescing patient is susceptible to suggestion and he has leisure to ponder over what he hears or reads. The patient who comes to a convalescent home has been through a serious mental and somatic crisis; his economic foundation is often seriously shaken; he needs replenishment of his vital resources. This enormous responsibility cannot be discharged without a great deal of thought and hard work on the part of the medical profession. Unless this is forthcoming while the development is still in its infancy, it will not achieve its full fruition. This constitutes a remarkable scientific and civic opportunity.

Physical Therapy in Teaching Hospitals

DR. CHARLES O. MOLANDER, Chicago: Physical therapy is on display, and to survive, it must render a real service; otherwise it will again sink into insignificance. As one visits hospitals, the thing that strikes one forcibly is the indifference of the hospital staff toward the department. There are reasons for it. A small percentage of medical schools are teaching physical therapy. The courses do not equally emphasize all phases of physical therapy. Not enough emphasis is placed on the clinical applications. There are a few postgraduate courses in medical schools for those physicians who are interested in finding out just where it is indicated. There is a marked lack of trained personnel to man the physical therapy departments. The scope of physical therapy has not been carefully defined. For example, the field of radiology, as well as physical therapy, claims ultraviolet rays. There are many short courses given by commercial concerns which naturally emphasize the products they sell. Such courses give one a decidedly wrong impression of the entire field. However, such courses cannot be condemned as much as the shortsightedness of medical schools and teaching hospitals in not making available adequate instruction in physical therapy. The literature in physical therapy is full of misstatements by men untrained in this field. There is no society of physical therapy in the country which the medical men as a whole respect. There are numerous quacks using physical therapy methods. Many doctors send their patients to masseurs, gymnasts and improperly trained persons for treatment. There is lack of appreciation as to the vastness of the field of physical therapy. It ramifies through every phase of medicine. However, it is a separate entity and should be considered as such in order that it may benefit the entire hospital.

With these facts, we are better able to proceed to organize a department of physical therapy for the teaching hospital. The first problem of a hospital that wishes to install a department is to select a medical man trained in this field and place him in charge of the department. His first task should be to make a complete local survey of the personnel, the size and arrangement of space, equipment, records, office and clinic routine, the history of the department, type cases being treated with names of the physicians who refer them, and the teaching and research being done. In selecting personnel it is suggested that the director get in touch with the American Physio-Therapy and Occupational Therapy associations, who are able to recommend competent aides. The best equipment should be obtained. The beginning should be made in a small way and the equipment increased in accord with the needs.

The most important task of the department is service to the patients. The director should see all patients personally, prescribe for them and follow them up carefully as often as the case may warrant. The watchword then is to pay close attention to one's patients, to do one's utmost in their behalf, and by so doing please the referring physician and gain his attention.

As the growth of the department depends on the cases referred by staff physicians, the gaining of their attention and having them respond are of paramount importance. Moreover, personal contact and discussion of type cases to be treated, consultation with staff members, and the establishment of clinics among the various departments will all help to interest physicians. One way to gain the attention of the staff members is to show them how to use the simpler things in physical therapy, those things which will help in everyday practice. To gain the attention of the physician, one should get results with cases he refers, invite consultation, go with him on ward walks, enter into staff meeting discussion, and get him to attend clinics that have a definite relationship to the type of work he is doing.

It is essential that the nurses should understand physical therapy. For graduate instruction, the Council on Physical Therapy of the American Medical Association has given suggestions and has divided the work. If possible, one or more research fellowships should be established. These fellows should work in close harmony with the clinical department of physical therapy. The work should be carried out along three lines: first, physical investigation of the agencies and apparatus; second, animal experiments to determine the physiologic and bacteriologic effects of the agencies used; and, third, the treatment of patients.

Occupational Therapy

DR. WILLIAM RUSH DUNTON, JR., Catonsville, Md.: The term occupational therapy was originated by the late George Edward Barton to supersede the terms diversional occupation, work cure, moral treatment and others. At present we are seeking a simpler term for this specialty. Occupational therapy may be said to be the use of any occupation for remedial purposes. It has been said that every physician and nurse should have the experience of a fairly severe illness. Perhaps as medical schools and training schools for nurses advance, a part of the curriculum will be a four weeks' course in illness and convalescence, with electives of surgical operations or the milder exanthems. In this way there will be a more sympathetic understanding of the patient, of his fears, of his discomforts, and of his unreasonableness. With this understanding, the physician or nurse can more intelligently minister to him.

It is during the period of convalescence that occupational therapy may be of greatest value. Any who have been seriously ill can appreciate how others feel when the active symptoms of illness have subsided and the patient is a weak, washed-out being, who is content apparently to rest, eat and sleep. As strength is gained, the convalescent wants to do something. It is generally unrecognized, even by the individuals themselves, how much every one craves a certain amount of manual occupation or physical activity. Reading is usually the first occupation permitted the convalescent. With the surgical case, the procedure may be somewhat different. Occupations in bed often aid in promoting healing by stimulating muscle tone and blood circulation and by increasing metabolism. It is to be emphasized that these bed exercises do much to relieve postural tensions of the viscera and so promote the well being and comfort of the patient.

But there is still much time to be filled if the spirit of the patient is to be kept up. Making scrap books, card board construction, pamphlet binding, bead work, various kinds of needlework, clay modeling, drawing, decorative painting, and weaving on a table loom are a few of the occupations that may be given. In medical convalescence there is apt to be less restriction of choice and the preference of the patient may be considered more than in surgical cases. Clay modeling, for example, is excellent as an aid in overcoming the tendency to contraction after palmar injuries. About a dozen crafts have been subjected to intensive study and from them it is easy to pick out one or more that will give the desired motion. If the patient is tuberculous and we tell him to go home and rest and eat we are not fulfilling our duty even though we give him a specific program for resting and eating. We must see that mental rest is also provided and that he does not worry how his business is getting along without him. We must give him some occupation which will so interest him that he has no time to think of his job.

It has been proved that, in sanatoriums where occupational therapy is prescribed, patients can be more easily persuaded to remain until the termination of the cure than in those in which it is not used and patients are left more or less to find their own methods of passing the time. Fatigue of course is to be avoided in any form of illness or the patient loses rather than gains. Sighing and restlessness are danger signals, but rest or a change of occupation should be given before they occur.

It may be accepted as an axiom that occupational therapy should not be prescribed until acute symptoms, such as an increased temperature or pulse or pain have subsided. Cardiac patients seem to be greatly influenced by fear. It seems probable that there is a definite association between certain physical diseases and definite emotional states. It is important, therefore, to change the mood of the cardiac patient and improve his morale. There is no better way of doing this than by prescribing occupational therapy. Knitting, crocheting, simple embroidery and tatting will be found to appeal to the majority of women. Drawing, simple illuminating, bead work and small frame weaving are suitable if none of these appeal, and can also be used for men. Carving may appeal to many, the medium being wood, bone, soap, or even shell.

The more advanced surgeons are now removing casts or splints earlier after fractures and prescribing appropriate exercises by means of occupations in order to restore muscle tone and reestablish joint function. Hooking rugs aids in restoring pronation and supination, as does reed basketry, the injured arm manipulating the winder. The use of a sewing machine aids a stiffened ankle, while a bicycle jigsaw helps knees and hip joints needing movement. There are many other occupations which may be beneficial. Among more marked mental cases it has been proved that occupational therapy hastens recovery. After almost every form of illness, occupations afford an excellent means of "hardening" the patient and enabling him to return to normal activities.

A hospital has been defined as a happiness factory. Occupational therapy is one of the most potent means of accomplishing this result of manufacturing happiness. It would seem that every hospital should have an occupational therapy department to add to its efficiency. Such a department can be started quite simply. Occupational therapy is merely an adjuvant in medical treatment. But it improves the morale of the patient, shortens the period of treatment, stimulates metabolism and improves the circulation, provides a means of functional reeducation following disease or injury, and is a means of "hardening" after illnesses such as tuberculosis or cardiac diseases.

DISCUSSION ON PAPERS OF E. H. L. CORWIN, DR. MOLANDER AND DR. DUNTON

DR. HARRY E. MOCK, Chicago: I want to discuss the broader point of view of physical therapy. It seems to me that on this side we have the hospital and the medical staff, the nurses, the research men interested chiefly in the acutely ill patient, devoting their time to studying the cause of that acute illness and the ways of overcoming it. Just as soon as the acuteness is over their interest in that patient ceases and they pass on to the next acute case. They are often spoken of as the scientific hospitals. On this side there is the hospital in which nurses and the medical staff now replace the research workers with the other groups, the social workers and the trustees. They are interested in the patient and the economic end-result that can be obtained by treating that patient, and they represent the art of healing a little bit more than this other group. They both have their function and they both must come together and meet in that hospital, the medical-surgical program of the future. The medical work and all of these adjuncts have opened our eyes to the economic end-result that we desire for the disabled or sick patient. In such a program there is a missing link, and that missing link is adequate provision for convalescent care. We discharge from hospitals hundreds of patients every year labeled "discharged cured," when they can hardly totter out of the hospital. If they have money to pay for their hospital bed they don't have to get out until they are ready to be discharged cured, but many of them must get out because their money is running out. The majority of those so-called discharged cured patients have absolutely no proper environment for convalescent care, and thus far in this country little provision has been made for that convalescent care. It is during that period of convalescent care or when the patient has reached the stage at which more strenuous efforts toward restoration of function can be brought in, that physical therapy and occupational therapy have their greatest duties to perform. So convalescence, occupational therapy and physical therapy all unite as the most important part at this stage in the economic end-result that we are seeking.

DR. JOHN S. COULTER, Chicago: The ideal program in physical therapy is represented by a chart on the walls of the Council on Physical Therapy exhibit in the hall. That original program, I think, was devised by Dr. Billings when he had charge of the rehabilitation division in the Surgeon General's Office, and comprised physical therapy, occupational therapy and vocational training. We are trying the three combinations at Northwestern Medical School. We have a physical therapy department. The Chicago Women's Club has established a curvative work shop for occupational therapy, and the Good Will Industries are now establishing in our medical school a vocational training shop. Thus we can call the attention of the medical students to this broad view of physical rehabilitation. To my mind, until we do call this program to the attention of the medical students we shall not have the proper use of physical therapy, nor shall we have proper convalescent care. We must start our convalescent care with medical education.

DR. BEVERIDGE H. MOORE, Chicago: In convalescent care, the art of medicine as distinguished from the scientific aspect of medicine comes into its own. The question of when convalescence begins is a variable one. In my work in orthopedics, it seems to be practically all convalescent care. I remember how Dr. Billings used to insist on our individualizing our cases, trying to make each case an individual one; treating the patient and not the disease. It has to be followed out exactly the same in physical therapy. The convalescent care ought to be the pleasantest part of getting well. This is where there is a chance for the medical profession to help out in rehabilitation work: inducing companies to make provision for taking back men who are handicapped.

ALBERT BACHEM, PH.D.: At the University of Illinois we have no department of physical therapy. Most of the physical therapy work is done by the various departments. It is my work to supervise the physical therapy technic, to measure the ultraviolet, to standardize the x-ray apparatus, to control the diathermy apparatus, to work out the proper dosage, and so on. In order to have the students taught about the fundamentals, we teach them biophysics, teach them the physiology of the various electromagnetic rays of ultraviolet and x-ray, and even include radium. The greatest difficulty in teaching these fundamentals came up when I found that even some of the most fundamental facts were not properly established; for instance, the penetration of ultraviolet rays into the skin, the distribution of x-rays through the tissues, and the resistance of the tissues to the various electric currents. We have not the centralization that they have in other universities, but I think the problem is solved just as well. We have the teaching and the application of physical therapy in the various departments highly specialized and, on the other hand, the students are enabled to study the fundamentals very thoroughly.

DR. FRANK BILLINGS, Chicago: Twenty-five years ago I accepted the chairmanship of the Board of Charities of the State of Illinois. Before my term ended, the name was changed to the Charities Commission. In 1906 our hospitals for the insane, our schools for delinquent girls and our schools for delinquent boys, the old soldiers' state home, and the home for the widows of soldiers were medieval in their management. Insane hospitals were used for custodial care only; physical restraint was used throughout all of them, from the Utica box to manacles on legs, arms chained to walls, strait-jackets, and everything one could name. In my investigations I found one poor old woman who had been in a Utica box day and night for fifteen years. After rehabilitation of the buildings we began organization. Schools for nurses, orderlies and all that were swept out of the institutions and civil service was required for every one but the superintendent. There was the organization of a school at Kankakee for the education of the staff themselves, where they

could go and spend months. I instituted physical therapy. I induced the governor to rent or buy lands near every institution, and there I got patients out at work at floral culture, in truck gardens, and even made little golf links for them. The result was that in four years there wasn't a manacle or a Utica crib or a strait-jacket in any institution in this state; they were thrown away. That is what physical therapy did.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

State Association to Publish Medical Journal. — The first issue of the *Journal of the Medical Association of the State of Alabama* will appear in July. The report of the publication committee of the state association recommending the publishing of a state journal was unanimously adopted at the annual meeting, April 21-24. The state medical association and the state board of health will jointly control the publication. Dr. Douglas L. Cannon will be editor for the association, and Dr. James N. Baker, Montgomery, editor for the state board of health.

Changes in Faculty at University of Alabama.—Dean Stuart Graves recently announced the following changes in the faculty of the University of Alabama School of Medicine, effective 1931-1932: Dr. Franklin S. DuBois, Chicago, will be assistant professor of anatomy and acting head of the department of anatomy, pending the selection of a professor and permanent head to succeed Edward A. Boyden, Ph.D., who will be professor of anatomy at the University of Minnesota. Dr. Gene H. Kistler will become assistant professor of physiology and pharmacology. Dr. Ralph McBurney, who has been on leave of absence the last two years, in which time he has completed his work for the M.D. degree at Rush Medical College, Chicago, and spent a year at Harvard for his D.P.H. degree, will return as professor of bacteriology and hygiene. Allen D. Keller, Ph.D., Yale University School of Medicine, will become professor and head of the department of physiology and pharmacology, succeeding Dr. Clyde Brooks. Dr. Brooks, after ten years' service at Alabama, will assume similar duties at the University of Louisiana School of Medicine. Dr. James Ross Veal has been promoted to assistant professor of medicine and surgery; he will also act as instructor in physiology and pharmacology. Dr. A. Hobson Davis, assistant professor of pathology and bacteriology, has been granted a year's leave of absence to study pathology at Palmer Memorial Hospital, Boston. Emmett B. Carmichael, Ph.D., of the department of physiologic chemistry, will do research in the new research laboratory being developed at Highland, N. C.

ARIZONA

State Medical Election.—At the annual meeting of the Arizona State Medical Association at Nogales, May 7-9, Dr. Harry A. Reese, Yuma, was installed as president, and Dr. Clarence Gunter, Globe, was made president-elect. Other officers elected are Drs. Clarence E. Yount, Prescott, and Delamere F. Harbridge, Phoenix, treasurer and secretary, respectively. The next annual session will be held in Globe, in 1932.

ILLINOIS

Free Tests for Lead Poisoning.—Blood tests to be made free by the laboratories of the Illinois State Department of Health are now available for persons exposed to lead poisoning. The McCord test should be made immediately after the person has taken employment which exposes him to lead absorption, and repeated each month or two thereafter. A drop of blood should be placed on an ordinary microscope slide and forwarded to the state diagnostic laboratory at Springfield or 1849 West Polk Street, Chicago. Among the workers most commonly exposed to lead poisoning are painters of all kinds, manufacturers of red and white lead, printers, lead miners, zinc smelters, manufacturers of rubber goods, pottery glazers and enamelers.

Chicago

Personal.—Richard E. Scammon, Ph.D., has resigned as dean of the division of biologic sciences at the University of Chicago, and Frank R. Lillie, Ph.D., has been appointed to succeed him. Dr. Lillie was formerly chairman of the department of zoology.——Maurice B. Visscher, Ph.D., professor of physiology and pharmacology, University of Southern California School of Medicine, has been appointed professor of physiology at the University of Illinois College of Medicine. The new laboratories, which have been designed to accommodate sections of 100 students in addition to many special laboratories for research, will be ready for occupancy during the summer.

Obstetric Patients Pay on Instalment Plan.—An instalment plan has been placed in effect at Presbyterian Hospital for obstetric patients. They are charged a $45 fee, including a laboratory fee of $5 for Wassermann test and urinalysis and $4 a day while the patient is in the hospital. For the normal stay of ten days, the $45 covers the entire hospital bill; an additional $4 is charged for each day over this period. This fee may be paid on the instalment plan, $5 at registration, $5 for each month the woman is pregnant and $5 each month thereafter until the total amount is reached before admission. Additional charges are made when circumcision and roentgenograms are necessary. If the patient is not delivered at the Presbyterian Hospital, the money is refunded, $5 being retained to cover the laboratory fee. These patients, who occupy beds in the general obstetric wards, are cared for by the resident physicians under the supervision of the head of the obstetric department. The social condition of each patient applying for the $45 rate is carefully investigated and no one is admitted who has sufficient income to pay for a physician. Patients able to pay a physician's fee may use the instalment plan but are charged rates in proportion to the accommodations desired. According to a report, May 18, 150 women were on the maternity list under prenatal care.

LOUISIANA

Society News. — The Louisiana Pediatric Society was addressed in New Orleans, April 13, among others, by Dr. Charles T. Williams, New Orleans, on "Gonorrheal Urethritis with Epididymitis," and Dr. Maud Loeber, New Orleans, "Use of Sodium Bromide in Cases of Reduction of Fehling's Not Due to Diabetes Mellitus."——Dr. Herbert R. Unsworth addressed a recent meeting of the East and West Felician Bi-Parish Medical Society on "Relationship of Pelvic Disorders to Mental Disturbances," and Dr. Charles W. Mattingly, "Differential Diagnosis and Treatment of Acute Appendicitis."

MASSACHUSETTS

State Medical Meeting at Boston, June 8-10.—The one hundred and fiftieth annual meeting of the Massachusetts Medical Society will be held at the Hotel Statler, Boston, June 8-10, under the presidency of Dr. Robert B. Greenough, Boston. Guest speakers will include Dr. Jacob P. Greenhill, Chicago, on "Postpartum Care"; Drs. George Grey Turner, Newcastle-upon-Tyne, England, and Stuart W. Harrington, Rochester, Minn., among others, will participate in a symposium on thoracic surgery, speaking on "The Paget Tradition" and "Résumé of the Surgical Treatment of Thoracic Lesions, Including Diaphragmatic Hernia," respectively. Dr. Alexander Primrose, dean and professor of clinical surgery, University of Toronto Faculty of Medicine, will deliver the Shattuck Lecture, June 8, on "The Evolution of Modern Surgery." Dr. Harvey Cushing, Moseley professor of surgery, Harvard University Medical School, Boston, will deliver the annual discourse, June 10. A symposium on the relief of pain during labor will be held Tuesday afternoon. Entertainment will include a lawn fête and tea at the estate of Mr. Larz Anderson, Brookline.

MICHIGAN

Physicians and Lawyers to Cooperate.—At a joint meeting of the Wayne County Medical Society and the Detroit Bar Association, May 5, a resolution was unanimously adopted by 800 members of the two professions as follows:

Resolved, That we recommend to the officers and directors of the Wayne County Medical Society and of the Detroit Bar Association that they each select five members to constitute a joint committee to meet together for the study of the question of cooperation between the two organizations, for the benefit of the general public and for mutual helpfulness, such committee to report to each body.

Henry C. Walters, LL.B., former president of the Michigan State Bar Association, introduced the resolution.

County Society to Care for Indigent Adults.—A plan proposed by the Berrien County Medical Society to care for indigent adult patients at Mercy Hospital, Benton Harbor, and

Pawating Hospital, Niles, was unanimously adopted by the board of county supervisors, April 16. The offer of the county society was made following an investigation into the cost of other plans, including care of these patients at University Hospital, Ann Arbor, as has been done in the past, the establishment of a county hospital and employment of a county physician. The plan provides that staff members of the hospitals and members of the county medical society will treat indigent patients without personal remuneration; a small percentage of the fees charged for roentgenograms, blood tests and other fees is to be turned over to the society for a fund to be used in improving the two institutions. It was estimated that from 35 to 40 per cent of the cost of sending these patients to Ann Arbor will be saved. In addition to the lower hospital rate, it was pointed out, there will be the saving of the $2 admission fee charged by the University Hospital and transportation costs. The new plan will not interfere with the present system of sending county tuberculosis patients to the Pine Crest Sanatorium at Oshtemo. Members of the society voted to give the plan one year's trial. The county spent more than $63,000 last year for medical bills which covered all classes of cases; $42,000, the largest item, was for tuberculosis cases, and $8,000 was the charge made by University Hospital.

MISSISSIPPI

State Medical Election.—Dr. John C. Culley, Oxford, was elected president of the Mississippi State Medical Association at its recent meeting in Jackson, and Dr. Thomas M. Dye, Clarksdale, was reelected secretary. Jackson was selected as the place for the next annual meeting, May 10-12, 1932.

Society News.—Drs. DeWitt T. Brock, McComb, and William O. Biggs, Osyka, among others, addressed the Pike County Medical Society, April 2, on "Toxemias of Pregnancy" and "Gastro-Intestinal Symptoms of Heart Disease," respectively.——Among others, Dr. Philip L. Mull, dean and professor of anatomy, University of Mississippi School of Medicine, University, addressed the Clarksdale and Six Counties Medical Society, March 25, on "Remarks on Applied Anatomy." ——Dr. Preston S. Herring, among others, addressed a joint meeting of the Central Medical Society and the Issaquena-Sharkey-Warren Counties Medical Society, April 21, "Some Abnormal Conditions in Obstetrics."

MISSOURI

Course for General Practitioners. — Registration headquarters for the graduate course and clinical conference, June 15-26, will be at the St. Louis Clinics, with offices in the new St. Louis Medical Society at 3839 Lindell Boulevard, St. Louis. The conference will consist of lectures, demonstrations and clinics on medical and surgical subjects. No effort will be made to arrange the material into courses, but the subject matter has been selected with special reference to the requirements of the general practitioner. The fee is $25 and registration will be limited to 100. The special guests listed in the preliminary program will be Drs. William W. Duke, Kansas City; William Engelbach, New York; Leonard G. Rowntree, Rochester, Minn., and Joseph C. Bloodgood, Baltimore.

NEW JERSEY

State Medical Meeting at Asbury Park, June 3-5.— The one hundred and sixty-fifth annual meeting of the Medical Society of New Jersey will be held at the Berkeley-Carteret Hotel, Asbury Park, June 3-5, under the presidency of Dr. George N. J. Sommer, Trenton. Guest speakers will include Drs. John B. Deaver, Philadelphia, on "Surgical Aspects of Biliary Tract Disease"; B. B. Vincent Lyon, Philadelphia, "Value of Duodenal Tube Drainage of the Biliary System and Treatment of Various Diseases and Disorders of the Liver"; Benjamin S. Barringer, New York, "Radiation of Bladder and Prostatic Carcinomas"; Angelo L. Soresi, New York, "New Views on Pathogenesis, Diagnosis and Treatment of Ulcer and Cancer of the Stomach, Cholelithiasis and Diseases of the Digestive Organs in General"; H. Burton Logie, New York, "An Etiologic Conception of the Disease Entity"; John H. Dunnington, New York, "Clinical Management of Heterophoria," and Thomas H. Johnson, New York, "Tumors in the Neighborhood of the Optic Chiasm, with Special Reference to Eye Symptoms." Entertainment will include a golf tournament, Wednesday, sponsored by the Monmouth County Medical Society at the Asbury Park Golf Club. Prizes will be awarded. Wednesday evening there will be a dutch treat supper dance and, Thursday evening, a dinner dance.

NEW YORK

Personal.—Dr. Charles E. Rowe, formerly on the medical staff of the Hudson River State Hospital, Poughkeepsie, was recently appointed medical superintendent of the Syracuse State School for Defective Children to succeed the late Dr. O. Howard Cobb. Dr. Rowe was graduated from Syracuse University College of Medicine in 1916.

Outbreak of Trichinosis.—Twenty-four cases of trichinosis were reported in *Health News*, May 11. Two farmers in the western part of the state bought a hog which they butchered. They and their families sampled the raw sausages and sold some of them to the neighbors. The two farmers and members of their own and of eight other families contracted the disease. Trichinosis was made a reportable disease in New York last year.

Suicides in New York.—There were 2,345 suicides reported in 1930 for the entire state, according to *Health News*, the largest annual total on record. The suicide rate, 18.6 per hundred thousand of population, was 22 per cent above the average rate for the preceding five years. The increase occurred mainly among men, the number rising from 1,563 in 1929 to 1,760 in 1930; among women, from 574 to 585. Poisonous gas was the leading means of suicide at all ages to the seventieth year. There were twenty-nine suicides in state institutions, located outside New York City, and nineteen in state hospitals.

New York City

Frontier Nursing Service Asks $100,000.—A drive by the Frontier Nursing Service to raise $100,000 for its summer program was announced, May 19, by Mrs. Mary Breckinridge, director of the service. The service has twenty-eight mounted nurse-midwives, stationed at nine outposts throughout mountain regions of the South and Middle West.

Graduate Course in Treatment of Fractures.—An intensive course in diagnosis and treatment of fractures will be given, June 1-6, in the New York Post-Graduate Medical School and Hospital, under the direction of Dr. John J. Moorhead, professor of traumatic surgery. The course includes four evening sessions, and two afternoon demonstrations of surgical anatomy and operative surgery. The fee is $25.

Society Receives Fund for Library. — The Medical Society of the County of Kings recently received the bequest of Dr. Thomas R. French, who died, Jan. 5, 1929, which consists of twenty-five shares of stock, the present value of which is $10,000. Dr. French provided in his will that the fund should be known as "The John and Sarah French Memorial Fund" in memory of his father and mother. He was directing librarian of the society's library for several years.

Personal.—Dr. Elias H. Bartley, who has just retired as president of the medical board of the Kingston Avenue Hospital for Contagious Diseases, Brooklyn, was the guest of honor at a dinner given, April 30, by the staff of the hospital. Dr. Bartley was a member of the board for thirty years and president for fifteen years. Dr. Murray B. Gordon was toastmaster at the dinner, which was attended by fifty physicians, including a number from Long Island College Hospital, where Dr. Bartley is emeritus professor in pediatrics.——Dr. Isaac Arthur Stoloff has been appointed adjunct professor in the department of surgery at New York Polyclinic Medical School and Hospital.

Noisy Trucks a Menace to Health.—Noisy trucks are a "serious menace to health" and must be driven off the streets of New York, according to Edward F. Brown, director of the Noise Abatement Commission, it is reported. In tests made, May 18, 86 per cent of the trucks tested were found defective, and most of the noise was caused by loose or badly adjusted parts which could have been fixed. Scientists for the Western Electric Company, measuring the noise given out by each truck, found the average noise level was 81 decibels, a decibel being the smallest change that the ear can detect in a level of sound. Three airplanes flying over the city together made only 62 decibels. The increasing practice of night trucking makes it necessary for truck owners to cooperate with the city.

Deny Permit for Coffey-Humber Clinic. — The state board of social welfare denied, May 19, the petition of the Better Health Foundation to establish a cancer clinic for experimental work with the serum treatment recently patented by Drs. Walter B. Coffey and John D. Humber of San Francisco. The application is reported to have been denied on the ground that there was no public need for the establishment of a dispensary for this treatment, and that ample facilities already existed in the vicinity of New York for carrying on the desired studies both clinically and experimentally. It was further,

reported that it would be unwise to set up near New York a special dispensary for the administration of one patented extract only. The denial refers to an amended application, dated May 14, which read "to establish and maintain a laboratory, clinic and/or dispensary," while the original petition read "to establish and maintain a hospital and one or more dispensaries." It was proposed to establish the clinic at Halesite, Huntington Harbor, L. I., the estate of Mrs. Grace Connors, the founder of the Better Health Foundation. Among the organizations opposing the petition of the foundation were the New York Academy of Medicine, the New York County Medical Society, the Institute of Cancer Research of Columbia University and the American Society for the Control of Cancer. The decision was taken by the unanimous vote of the seven members of the board present at the meeting, it is reported, on recommendation of a special committee of four which studied the proposal and held hearings. Dr. John Richard Kevin, vice president of the board, presided (THE JOURNAL, March 21, p. 955).

OHIO

Schireson Surrenders His License.—At a special meeting of the state medical board, May 14, in Cleveland, Dr. Henry Junius Schireson surrendered his certificate to practice medicine in the state. The meeting was called to consider revoking Schireson's license, the preferred charges being gross immorality, conviction of a felony and grossly unprofessional or dishonest conduct. The charge of grossly unprofessional or dishonest conduct applied to the conduct of his business in Cleveland during the past year. Having relinquished his right to practice in Ohio, Schireson cannot appeal to the courts for restoration, it is reported.

Society News.—Dr. Henry Kennon Dunham, Cincinnati, addressed the Toledo Academy of Medicine, May 1, on the care of tuberculous patients.——Drs. Paul M. Holmes, Stanley D. Giffen, Foster Myers and William Gordon Hartnett, Toledo, conducted a symposium on childhood tuberculosis before the Wood County Medical Society, Bowling Green, in April.——Drs. Frank W. Lynch, San Francisco, and James L. Reycraft addressed the Cleveland Academy of Medicine, May 15, on "Inversion of the Uterus" and "Tumors in Pregnancy," respectively.——Dr. Jacob L. Bubis, Cleveland, addressed the Ashland County Medical Society, May 1, on "Interrelation of Obstetrics, Gynecology and Abdominal Surgery."——The third of the series of public health lectures sponsored by the Cleveland Academy of Medicine was given by Dr. Louis J. Karnosh, May 24, on "Life's Impact on the Nervous System.,'——"The Doctor in Court" was the subject of a program presented before the Montgomery County Medical Society, Dayton, May 15, by Attorneys R. N. Brumbaugh, S. S. Markham, Judge Robert C. Patterson and Drs. Edwin M. Huston, William A. Ewing and Leora G. Bowers.——Dr. Howard D. McIntyre, Cincinnati, addressed the Clermont County Medical Society, April 15, on brain tumor.——Dr. Howard H. Yoakem, Columbus, addressed the Fayette County Medical Society, Washington Court House, April 2, on "Autonomic Imbalance from a Surgical Point of View and Its Relation to Goiter."

TENNESSEE

Society News.—The West Tennessee Medical and Surgical Association held its fortieth annual session at McKenzie, May 21-22; among the speakers were Drs. Sam T. Parker, "Chronic Purulent Otitis Media"; W. Likely Simpson, Memphis, "The Systemic Effects of Chronic Nasal Sinus Infection"; Otis S. Warr, Memphis, "Undulant Fever," and John J. Shea and Edward C. Mitchell, Memphis, "Value of Intravenous Blood Transfusion in Upper Respiratory Infection." Dr. Harris T. Collier, McKenzie, gave the presidential address on "Periodic Health Examinations."——Dr. Eugene B. Elder, superintendent, Knoxville General Hospital, was elected president of the Tennessee Hospital Association at its recent convention.

WISCONSIN

Cancer Clinics.—Dr. Joseph Colt Bloodgood, Baltimore, conducted clinics showing bone tumors and other new growths at a meeting sponsored by the radiologic section of the Wisconsin State Medical Society, Milwaukee, May 27-29. Presentation of cases were by lantern slides and included the following material: (1) short clinical history (diagnosis omitted), (2) photographs, (3) roentgenograms, (4) photomicrographs and (5) serial roentgenograms of cases treated by radiation.

Personal.—Dr. Francis P. Daly, Reedsburg, was recently appointed deputy state health officer for the fourth district, to succeed the late Dr. Irving D. Wiltrout, Chippewa Falls. A public meeting was held, April 28, in honor of Dr. Daly before he left for his new headquarters in Eau Claire.——Dr. Robin C. Buerki, superintendent of the State of Wisconsin General Hospital, Madison, has been appointed superintendent of the new state orthopedic hospital, La Crosse.

GENERAL

Red Cross Celebrates Fiftieth Anniversary.—The American Red Cross celebrated the fiftieth anniversary of its founding, May 21, in Washington, D. C., with a dinner attended, among others, by representatives of twenty-four foreign countries. There were local celebrations held simultaneously with the dinner throughout the country, and direct touch was kept through the nation-wide radio broadcasts provided through the courtesy of the National and Columbia broadcasting companies. Chief Justice Charles Evans Hughes, the toastmaster, introduced President Hoover, who is also president of the Red Cross. The organization meeting was held, May 21, 1881, at the home of Clara Barton. A special two-cent postage stamp was issued, May 21, in commemoration of the anniversary, the first day's sales being in localities having historical relation to the event; the postoffices in Washington, D. C., and Dansville, N. Y., were selected because the former is the home of national headquarters, and Dansville is the city in which the first chapter of the Red Cross was organized.

Childless Marriages.—An analysis by the Milbank Memorial Fund of the data on 69,620 married women, taken from the 1910 federal census, indicates that birth control, or decreased fecundity or both, is responsible for nearly twice as many childless families in cities as compared with rural districts. Among women from 40 to 49 years of age, 16 per cent of those living in cities were found to be childless, as compared with 9 per cent of those living in the country. The urban samples were selected from the thirty-three Northern cities of 100,000 to 500,000 population, and the rural samples, from seventy-four counties neighboring the cities. Childless marriages were found to be two and one-half times as common among professional people in the cities as among farm laborers. In the city groups, 18 per cent of the wives of professional men were childless, as were 16 per cent of the wives of business men, 15 per cent of the wives of skilled workers, and 14 per cent of the wives of unskilled workers. Among the rural groups, 10 per cent of the wives of farm owners and 7 per cent of the wives of farm renters and of farm laborers were without offspring.

Conference to Recommend Vitamin Standards in Pharmacopeia.—A conference was held, May 7, in New York, to recommend standards for vitamins A and D in cod liver oil for the United States Pharmacopeia. It was held under the auspices of the U. S. Pharmacopeial board of trustees and revision committee, and was for the purpose of preparing a report for the International Conference on Vitamin Standards called by the Health Organization of the League of Nations, which will be held in London, June 17, under the chairmanship of Dr. Edward Mellanby, Sheffield, England. Among those present were Lafayette B. Mendel, Ph.D., Yale University School of Medicine, New Haven, Conn., the discoverer of vitamin A, and Elmer V. McCollum, Sc.D., of Johns Hopkins University School of Medicine, Baltimore, the discoverer of vitamin D. A discussion of the needs of the present situation was held, and the modifications needed in the present United States Pharmacopeia standards were outlined. The attitude of the government was discussed by representatives of the government laboratories. This conference made no attempt to reach a final decision on standards to be adopted by the Pharmacopeia. At a later meeting, a committee was to agree on the conclusions to be presented to the London conference. The international agreements reached at the London conference will in turn be presented to a second American conference next fall. The decisions reached at this meeting will be given a trial in a number of American laboratories for one year before the conference makes its final recommendations for pharmacopeial adoption.

Commonwealth Fund Activities.—The Commonwealth Fund of New York, established in 1918 by the late Mrs. Stephen V. Harkness, reports an expenditure of $2,095,911.74 in 1930 in its three major fields of interest, public health, mental hygiene and British-American relations. Foremost among the developments of 1930 was the beginning of a program by which the fund enters into formal cooperation with state health departments for the promotion of rural health service. Two counties are selected in a state, in which the fund will aid local health authorities to develop their service, the expense to be shared by the county, the state and the fund. In each state fifteen

scholarships to medical schools will be provided annually for rural physicians, five in each of the special counties and five from the state at large. Tennessee was the first state chosen for this program. Massachusetts followed and one unit is now in operation. Since the publication of the report, Mississippi has been selected for a similar plan. The last two of five rural hospitals, built with funds supplied jointly by the local community and the fund, were completed during 1930: the Community Hospital at Beloit, Kan., and the De Ette Harrison Detwiler Memorial Hospital, Wauseon, Ohio. Graduate training for rural physicians has also been made available through the rural hospital program. Eighty-two fellowships have been provided for study in eleven medical schools. Results of the child health demonstrations, which ended, Dec. 31, 1929, are considered in the report. In each county the services set up by the demonstrations have been maintained. In the field of mental hygiene, the fund maintains in New York the Institute for Child Guidance, now in its fourth year, and the London Child Guidance Clinic, in its second; through the Division on Community Clinics of the National Committee for Mental Hygiene, it provides an advisory service to child guidance agencies. The report directs attention especially to a serious deficiency in the number of trained psychiatrists. In June, 1930, the fund withdrew from its activities in the promotion of visiting teacher service. More than one third of the 1930 appropriations of the fund were devoted to projects carried on under independent auspices. The largest of these was a gift to the Provident Hospital, Chicago, to aid in establishing a center for the training of Negro physicians. Others include grants for studies of undulant fever sponsored by the National Research Council, of maternal deaths in New York, and of trachoma by Washington University School of Medicine, St. Louis. One grant provides public health nursing service for seventeen counties in New Mexico, where lack of local funds made impossible the public health service needed.

CANADA

University News.—A fellowship in preventive medicine has been established at the University of Toronto in honor of the late Dr. Charles John C. Hastings. The fellowship, which has a value of $1,500, is endowed with funds raised by public subscription organized by the Canadian Social Hygiene Council and will be awarded every three years, beginning in October, 1932.——An endowment fund of $1,000 is being raised by the class of 1931 at University of Western Ontario Medical School, London, in honor of the late Dr. Alfred J. Grant. This was the last class taught by Dr. Grant.——Dr. John Charles Boileau Grant, professor of anatomy at the University of Manitoba Faculty of Medicine, Winnipeg, since 1919, has been appointed to the chair of anatomy at the University of Toronto to succeed Prof. J. Playfair McMurrich.——Dr. Donald Mainland, assistant professor of anatomy at the University of Manitoba since 1927, has been appointed professor of anatomy at the University of Dalhousie, Nova Scotia.

FOREIGN

Society News.—The second International Congress of Tropical Medicine will be held in Amsterdam, Sept. 12-17, 1932. Subjects to be discussed are: avitaminoses, leptospira and yellow fever, helminths (especially ancylostoma), malaria, blackwater fever, protozoan blood diseases and kala-azar. Prof. G. Grijns assumed the presidency of the congress after the death of Prof. Christiaan Eijkmann.——A series of conferences for physicians and health workers interested in social hygiene and in diseases of the tropics will be held in Paris, July 22-31, in connection with an international colonial exposition now in progress, under the auspices of *L'Hygiene Sociale*. Among subjects to be discussed are welfare of native children, mosquito control, potable water, leprosy and syphilis, trypanosomiasis and medical problems of aviation. Information may be obtained from the secretary-general, *L'Hygiene Sociale*, 112, Boulevard Haussmann, Paris.——Ten lectures on diseases of the lung will be presented at the Hôpital de la Charité, 47, Rue Jacob, Paris, July 6-11, by Drs. Bordet, Kourilsky, Turpin, Benda and Iselin. For information, write "L'Association pour le développement des relations médicales," Salle Béclard, Faculté de médecine, Paris. This is one of a comprehensive series of graduate courses to be presented in English during June and July in the hospitals of Paris. In the United States, Dr. Frank Smithies, 920 North Michigan Avenue, Chicago, will give detailed information.——The third congress of the Pan-American Medical Association will be held, July 26-31, in Mexico City. Three mornings will be devoted to visiting hospitals and laboratories, and the department of public health; afternoons will be given over to section meetings. The president of the republic will attend the opening meeting and will receive the guests at Chapultepec Castle, Monday evening, July 27. Further information will be sent on application to Dr. Francisco de P. Miranda, executive secretary of the congress, Department of Health, Mexico City; Dr. Conrad Berens, 35 East Seventieth Street, New York, or Dr. José E. Lopez-Silvero, secretary of health, Havana, Cuba.

Government Services

Change of Station in the Navy

Comdr. Frederick Ceres to aide on staff, commander aircraft, battle force, U. S. Fleet; Lieut. Herman A. Gross from the naval hospital, New York, to the U. S. S. *Chaumont;* Lieut. Jay F. Miller from the naval station, Guam, to the naval hospital, San Diego; Lieut. Vincent Hernandez, from the naval hospital, Washington, D. C., to duty with the second brigade, U. S. Marines, Corinto, Nicaragua; Capt. Charles W. O. Bunker, from U. S. S. *Relief* to bureau of medicine and surgery, Washington, D. C.; Lieut. John R. Lynas, from naval hospital, San Diego, to naval hospital, Pearl Harbor, T. H.; Lieut. Comdr. Eben E. Smith to the naval air station, San Diego; Lieut. Clifford G. Hines, to the naval air station, Hampton Roads; Lieut. Comdr. Leon W. McGrath, from naval station, Guantanamo Bay, Cuba, to first brigade, U. S. Marines, Haiti; Lieut. Dwight J. Wharton, from naval hospital, San Diego, to naval station, Guam; Capt. Montgomery E. Higgins, from naval dispensary, navy department, to Asiatic Station; Comdr. Claude W. Carr, from U. S. S. *Wyoming* to naval station, Guantanamo Bay, Cuba; Lieut. Comdr. Fred W. Granger from the training station, Hampton Roads, Va., to the naval station, Guam; Lieut. Cameron L. Hogan, from the navy yard, Portsmouth, N. H., to the submarine base, Coco Solo, C. Z.; Capt. James E. Gill to naval air station, Pensacola, Fla.; Lieut. Comdr. James A. Bass from naval dispensary, navy depot, to Asiatic Station; Lieut. Willard S. Sargent from naval station, Guam, to receiving ship, New York; Lieut. Comdr. Charles E. Morse, Jr., from naval hospital, Pearl Harbor, T. H., to fourth naval district; Capt. John L. Neilson, from U. S. Naval Hospital, Pearl Harbor, T. H., to naval hospital, Mare Island, Calif.; Capt. Edward C. White, from naval hospital, San Diego, Calif., to U. S. Naval Hospital, Pearl Harbor; Lieut. James F. J. Finnegan, from naval station, Tutuila, Samoa, to naval hospital, San Diego; Lieut. Comdr. James E. Fetherston, from naval hospital, New York, to Asiatic Station; Lieut. Gilbert E. Gayler, from submarine base, Coco Solo, to U. S. Naval Hospital, Boston; Lieut. Charles W. Robles, to Asiatic Station; Lieut. Wadeeh S. Rizk, from navy yard, Philadelphia, to U. S. S. *Wyoming;* Comdr. Walter C. Espach, from naval hospital, Great Lakes, Ill., to duty with Garde d'Haiti, Port au Prince, Haiti; Lieut. John M. Bachulus, to naval station, Pensacola, Fla.; Capt. William J. Zalesky from the navy yard, Pearl Harbor, T. H., to the naval hospital, Boston; Lieut. Comdr. William B. Hetfield from the second brigade, U. S. Marines, Nicaragua, to U. S. S. *Relief;* Lieut. Hubert J. Van Peenen from naval station, Guantanamo Bay, Cuba, to naval medical school, Washington, D. C.; Lieut. Comdr. Joseph L. Schwartz, to naval station, Tutuila, Samoa; Comdr. Griffith E. Thomas, to the navy yard, Pearl Harbor, T. H.; Lieut. Comdr. Thomas L. Morrow from naval hospital, Parris Island, S. C., to the second brigade, U. S. Marines, Corinto, Nicaragua.

The Government Needs Physicians

Applications for the positions of medical officer, associate medical officer and assistant medical officer in general medicine and surgery will be rated as received by the U. S. Civil Service Commission at Washington, D. C., until June 30. The examinations are to fill vacancies in the departmental service, Washington, veterans' administration, public health service, Indian service, Coast and Geodetic Survey, and Panama Canal service. Competitors will not be required to report for examination at any place but will be rated on their education, training and experience. Applicants must have been graduated from a reputable medical school not more than twenty years prior to the date of making oath to the applications. For the positions of medical officer and associate medical officer, certain specified hospital service and experience is required; for the position of assistant medical officer, at least one year of practice or internship is required.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 2, 1931.

The India Medical Conference

In a previous letter a meeting of the All-India Medical Conference was reported, at which the maintenance of proper standards in provincial institutions for medical education was discussed. Resolutions were passed regretting the action of the British Medical Council in withdrawing recognition of Indian degrees, though this was due to refusal of the Indian universities to allow inspection of their examinations. Another meeting of the All-India Medical Conference has taken place. The president, Dr. Jivraj Mehta, said that the challenge to Indian universities made by the British Medical Council had unified the universities and the medical profession and had led to the proposed establishment of an All-India Medical Council for the proper control of medical education. Dr. Mehta urged that the proposed council should raise the standard of medical education throughout India. Special efforts were needed to develop graduate instruction, which necessitated special hospitals. The Indian Medical Service must remain purely military and its civil side must be entirely abolished. Most of the failures of the Indian Medical Service, including those of the Great War, were due to the greed of the Indian Medical Service officers for private practice and the plums of office which they could get on transfer to the civil side. To understand this attack it must be remembered that the Indian Medical Service is the medical service of the Indian army and that its personnel is mainly British, though Indians are eligible on the same terms and do form a part of it. As the officers of the Indian Medical Service were at first almost the only persons available for civil medical appointments and still are the best qualified, these appointments have been given to them and are highly valued as an auxiliary source of income. But the enmity of Indian nationalists to British rule in general is strongly manifested in a medical form by the spokesmen of the Indian medical profession, although this is entirely a British creation. The president's attack must be read in the light of a desire to exclude the British and keep the Indian civil medical appointments entirely for Indians. The same spirit is shown in his desire to extend the boycott of British cloth to drugs of British origin. He emphasized the need of placing the drug industry on such a footing that India would be self sufficient in supplying drugs, surgical instruments and equipment. For this purpose an all-India pure drugs act should be devised to prevent the import and sale of adulterated drugs. He urged the constitution of a ministry of health in every province.

Professor James Lorrain Smith Is Dead

James Lorrain Smith, M.A., M.D., F.R.S., professor of pathology, and dean of the medical faculty of Edinburgh University, has died, aged 68. He had a philosophical bias which influenced his teaching. He was professor of pathology at Belfast, Manchester and Edinburgh in succession. With Prof. J. S. Haldane he collaborated in a series of studies on the respiratory functions and oxygen capacity of the blood. He worked at carbon monoxide poisoning and the secretion of oxygen by the lungs and he devised the first satisfactory method of determining the blood volume of man. From this followed the discovery that the anemia of chlorosis is due to dilution of the blood with excess of plasma, while in pernicious anemia there is deficiency of hemoglobin. In collaboration with his chemical colleagues at Manchester he worked out two new methods of histologic staining—the staining of fresh fat with nile blue sulphate, which distinguishes neutral fat from fatty acids, and the extension of Weigert's bichromate-hematoxylin process for myelin to tissue lipoids. His philosophical bent made him a great and impressive teacher who was never lost in the details of his subject. As dean of the medical faculty at Edinburgh he endeavored to correlate the teaching of biology with that of anatomy, bacteriology and practical medicine. He placed before his students the history of a case and got them to correlate with it the morbid products they were examining. He held that teaching and research should not be separated. Research kept the professor alive in his teaching, and teaching stimulated him to further research.

The London Municipal Hospitals

Side by side with the hospitals of London supported by voluntary subscriptions, which include the medical schools, many other general hospitals and the special hospitals to the number of about 100, exist the municipal hospitals. The former were to some extent described in the state board number of THE JOURNAL, April 25. The latter have been called "poor-law hospitals" because they are maintained under the poor law, or "infirmaries," because they are largely filled by the infirm or aged poor. They number thirty and, though they are large hospitals, with beds running from 400 to 800, they have in the past played only a limited part in the advance or the teaching of medicine, which has been mainly the work of the voluntary hospitals. But in recent years their equipment has been modernized. Instead of being controlled by the local borough councils of London they have now all come under the London county council; this centralization has already had a speeding up effect, and they must eventually come up to or near the standard of the great voluntary hospitals. The hospitals for infectious diseases have always been municipal hospitals and been long under centralized control by a body termed the Metropolitan Asylums Board, but they have now also passed under the London county council. Their work in teaching and in research has always been excellent.

On the taking over of the infirmaries by the London county council, it was provided in the act that a London voluntary hospitals committee should be specially set up for consultation with the London county council so as to coordinate the work of the voluntary and the municipal hospitals. The first report has now been presented. The council has decided that it cannot depart from the practice of not making capital grants to voluntary hospitals or general maintenance grants, but it is willing to continue to make specific payments for specific services required by the council and rendered to the sick poor. The provision of pathologic laboratories at the council's hospitals has been discussed with the committee. The council has in mind as an ultimate ideal a well equipped and adequately staffed laboratory in every general hospital, and one or more centralized laboratories for the specialized work requiring expert knowledge and elaborate equipment. It proposes to establish five "group" laboratories capable of dealing with more specialized work.

USE OF MUNICIPAL HOSPITALS FOR MEDICAL EDUCATION

At the invitation of the council, a memorandum was prepared by the committee on the use of municipal hospitals for medical education and on methods of staffing. It was submitted that the appointment at the municipal hospitals of resident house physicians and house surgeons would prove of the greatest value in graduate education. The council concurred and already has made provision for such appointments. The committee also recommended that the present consultant services at municipal hospitals be extended and an advisory board appointed constituted for recommending consultants for appointment. Opportunities for students to visit municipal hospitals for the purpose of studying diseases more often seen in those institutions than in the voluntary hospitals have been much appreciated, and closed cooperation between teaching and municipal hospitals will be encouraged. Because of the scarcity of obstetric beds at

teaching hospitals, the teaching of students will be allowed at municipal hospitals in connection with maternity beds whenever possible.

Demand for Donors for Blood Transfusion

At the annual social gathering of the British Red Cross Society Blood Transfusion Service, Mr. P. L. Oliver, the honorary secretary, reported that the medical research council was making a grant of half the salary of a medical officer in the service, who would have unique opportunities for investigating blood transfusion. The service had had a wonderful year of progress, and the 1931 demands were already so heavy as to strain their resources. Statistics showed 56 per cent of lives actually saved by transfusion, while a further 21 per cent of results were returned as satisfactory. As a mark of appreciation of the value of the service to insurance companies, the Eagle Star and British Dominions Company had offered to present a free policy to members of the service up to 50 per cent of all claims between $500 and $2,500. The total paid by the service in compensation was under $500. The demand for donors is shown by the following figures of calls: 1922, 13; 1925, 428; 1929, 1,360; 1930, 1,627. This year 600 calls have been dealt with, as compared with 462 in the corresponding period of 1930. A blemish on the work was the apathy of the provinces in forming similar services to that of London. Few large cities had any regular service, and as a result professionalism was gradullay creeping in. Up to the present, 121 members of the service have qualified for the badge of honor given by the British Red Cross Society to donors who carry out ten transfusions.

PARIS

(From Our Regular Correspondent)

April 15, 1931.

Extension of the Use of B C G Vaccine

In opening the Congress on Tuberculosis, held at Bordeaux, M. Blaisot, minister of public health, gave an account of the results secured by antituberculous vaccination of the new-born by means of the B C G vaccine of Calmette and Guérin. He stated that 90,000 new vaccinations had been performed in France during 1930 and that the good effects have already been noted in a general diminution of infant mortality from tuberculosis and likewise from other diseases. The minister obtained from parliament an appropriation for the reimbursement of the Institut Pasteur for the expense incurred in the preparation of the vaccine that it manufactures and distributes gratuitously to all physicians and midwives who apply for it.

Dental Caries Revealed by Airplane Flights

Dr. Garsaux, head of the medical service of the aerodrome at Bourget, near Paris, has noted several instances of dental pain in aviators, which developed during an airplane flight. The pain was in or near the large molars, which caused no disturbance while the aviators were on the ground. It was a question of unsuspected caries, with granulomas about the roots and small gas abscesses that became distended under the influence of the different atmospheric pressure. The teeth appeared to be intact and the fillings did not show fissures or the slightest communication with the outside. But, as the atmospheric pressure diminished with the greater elevation of the airplane, the pressure of the gas confined at the base of the roots increased and caused an irritation of the nerve fibers. This nervous irritation produced sometimes a state of dizziness, which does not occur, during an airplane flight, in a perfectly healthy person.

The Bread Question

The decision reached by the national government, following the formal opinions expressed by the Academy of Medicine, the superior council of public health and the Société de thérapeutique, together with the protests of the scientific press, to prohibit, in the manufacture of bread, the use of chemical substances (bromate and persulphate of potassium, and the like) continues to stir the public and especially the flour milling industry. The millers contend that the harm or disadvantages of bread thus prepared have been greatly exaggerated. But the public has noted that physicians are more and more inclined to prohibit the use of bread in the diet of patients with dyspepsia and in disorders of nutrition. M. Schribaux, professor at the Institut agronomique and member of the Académie d'agriculture, has launched a campaign to show that the wheat grown on French soil will furnish excellent flour, without the admixture of any chemical products or of any foreign type of wheat, but depending only on certain conditions, which can be readily supplied by the agriculturist, the miller and the baker. In the first place, greater care in the selection of seed wheat should be observed. On the 3,250,000 hectares (about 8,000,000 acres) of soil sown to wheat in France, one finds forty-eight different varieties of wheat, four of which are poor; that is to say, they furnish mediocre flour. The agriculturist is in the habit of sowing wheat that gives the largest yield per acre, as his profit is thereby greatly increased; but wheat that gives the highest yield contains a higher percentage of hydrocarbons and cellulose and a smaller percentage of gluten. He uses too much phosphate fertilizer, as this is abundant in France (coming from Morocco and Tunisia) and is sold at a low price, and not enough nitrogen-containing fertilizers, which alone will increase the gluten content of the wheat. The millers, in order to obtain a whiter flour, employ a bolting of from 75 to 80 per cent, which eliminates too much of the outer layers of the grain in which are the gluten and the ferments. The baker no longer uses leaven; that is to say, dough kept in reserve, but yeasts or ferments that act more rapidly, though the result is not so good. Furthermore, mechanical kneading has entirely replaced kneading by hand, in order to comply with the eight-hour law and to avoid night work, and the apparatus employed for kneading should be improved, as it is far from adequate. It is thus owing to a combination of errors and defects that the poor quality of bread results; which the millers or bakers seek to remedy or to cover up by the addition of unhealthful chemical products. According to M. Schribaux, if the agriculturists, the millers and the bakers will consent to mend their ways and to renounce their bad practices, France can produce excellent wheat, furnish a flour that is rich in gluten, and supply a good quality of bread, without the necessity of importing foreign wheat, whereas the wheat imports last year took two billion francs ($80,000,000) in gold out of the country.

The Sale of Heroin

A peculiar blunder of the financial administration has afforded the public press considerable amusement. Heroin, cocaine and other narcotics can be sold only in the drug stores and on the presentation of medical prescriptions, the supervision of which is strict. But there is a clandestine trade that is likewise subject to active surveillance at the frontiers and elsewhere. When the police discovers supplies of narcotics brought into the country surreptitiously, the law requires that the product shall be confiscated. Another law provides that all confiscated products, of whatever nature, shall be sold at public auction and the proceeds turned into the national treasury. Not long since, there appeared on the billboards of Paris a poster announcing such an auction sale, in which was enumerated, among other things confiscated by the police, such as rifles, revolvers, prohibited fishing apparatus, and the like, an immense supply of heroin (200 Kg.), or more than sufficient to meet the needs of the whole of France for several years, and of which the first comer might legally have obtained possession. The administration of the custom-house had neglected to get in touch with the administration of public health. Fortunately, no purchaser appeared, not even the central pharmacy for the hôpitaux de Paris.

In Memory of Dr. Fernand Widal

At a well attended meeting in the Great Hall of the Hôtel des syndicats médicaux, ceremonies in memory of Fernand Widal were recently held. Prof. Pasteur Valléry-Radot (grandson of Pasteur), who was a pupil of Fernand Widal and who is now an associate professor at the Faculté de médecine, delivered an excellent address on the work of his former teacher. He described his marvelous methods of work and experimentation and recalled the discoveries for which science is indebted to him. He showed what pathology would be today without the work of Widal and placed him, among the great men of France, alongside Claude Bernard and Pasteur.

BERLIN

(From Our Regular Correspondent)

April 20, 1931.

Physicians on Trial for the Lübeck Disaster

Several previous letters have contained reports on the disaster in Lübeck, the investigation that followed and the final scientific decision in this sad affair. There remain a few statements to be added. As a result of the preliminary hearing of the physicians concerned, the latter have been formally arraigned on the charge of homicide due to negligence. The accused are Obermedizinalrat Dr. Altstaedt, Prof. Dr. Deycke and Prof. Dr. Klotz. The trial will be held in May. The compensation for the persons who suffered damages by reason of the inoculations has been assumed by the senate and citizenry of Lübeck, as the result of special legislation. Testimony that, under the present circumstances, may possibly be termed heroic has been supplied by Dr. Altstaedt, one of the accused. He inoculated his own child, a week after its birth, with the B C G vaccine, but of course with the original preparation. He has thus declared to the world that he is still convinced of the harmlessness of the B C G vaccine. Likewise, Calmette, some time ago, inoculated his own grandchild, in order to furnish similar personal evidence for his conviction. Several weeks have passed since Dr. Altstaedt's child was vaccinated and no untoward symptoms have as yet developed.

Commission on Cancer Control Appointed

Germany is taking great interest in cancer research and cancer control. As the federal minister of the interior Dr. Wirth recently announced during the deliberations of the budget committee in the reichstag, a federal commission on cancer control was appointed, February 25, to take charge of the systematic organization of cancer control in Germany. The duties of the commission are to promote the exchange of experiences, to adopt the necessary measures and to further the arrangements for cancer control in the German *länder* and provinces. Dr. Dammann, the ministerial director in the federal ministry of the interior, has accepted the chairmanship and Geheimrat Prof. Ferdinand Blumenthal, the director of the Cancer Institute of the University of Berlin, is the vice chairman.

Short Waves for Cancer Irradiation

The increase in cancer incidence in Germany, according to the statistics of recent years, has had the natural result of intensifying the crusade against cancer. From the therapeutic standpoint, importance attaches to the new experiences with cancer therapy with extremely hard roentgen rays, which E. von Schubert has reported from the Frauenklinik of the University of Berlin. A survey of the irradiation methods applied at the present time to cancer of the neck of the uterus shows, with approximately identical results, extremely diverse technic. In general, one notes an increasing tendency to apply radium. The results, however, are still unsatisfactory, especially in the inoperable cases and in recurrences. The superiority of radium is recognized for purely local application; but when large areas must be irradiated the roentgen tube is preferred, especially if its action can be made to resemble that of radium. One way to accomplish this is to distribute the dosage over several days with a small dose per minute and, at the same time, a heavy total dosage; the other way is to change essentially the quality of the rays by shortening the wavelength. Until recently only a tension of about 200 kilovolts was employed; but today apparatus is being constructed that supplies a steady current of 600 kilovolts. The tubes will stand only a current of 400 kilovolts; further development is, however, possible, if it appears desirable. On this basis, an equipment has been installed in the aforementioned clinic the chief instrument of which is a half wave apparatus of 600 kilovolts that functions in accordance with the Villard system. The tubes are manufactured especially for these high tensions and are now operated regularly with 360 kilovolts. The equipment was installed in such a manner that in the treatment room there is no electrical apparatus, and so that the rays come up through the floor, the tube being placed in a chamber beneath the floor level. In a third space is the machine equipment. A system of safety devices is provided to combat the dangers arising from the high tension. The undesired roentgen irradiation is intercepted by plates of lead that line the walls of the tube chamber and that weigh several hundred pounds. The clinical experiences are still too few to risk any definite statement. The advantages of the protracted fractioned method of irradiation introduced by Coutard lie in the lessened damage to the skin by the extremely hard rays applied from a great distance, and the long continued daily irradiation (extending over several weeks), as compared with the intensive burden imposed on the skin by the single maximal dose, or the dose applied in a few days. The injuries to the skin resulting from the protracted method heal with scarcely a trace. Sielmann achieved some good results in inoperable cancers, particularly of the tongue and of the cardia. It is possible that even in supposedly inoperable cancers a cure may be brought about, or at least that far-reaching improvement may be effected.

Research on Hypersusceptibility to Therapeutic Serum

In memory of the late Prof. Hans Aronsohn, bacteriologist of Berlin, a prize has been established that will be given annually for the best scientific study in the field of bacteriology. This year, the curators of the foundation awarded the prize of 3,000 marks ($714) to Prof. R. Otto, director of the Prussian Institute for Infectious Diseases (the "Robert Koch" Institute), for research in the field of immunization, particularly anaphylaxis. In his address for the occasion Otto discussed the significance of serum sickness for research on anaphylaxis. Serum hypersusceptibility occupies a middle position between anaphylaxis and idiosyncrasy. Otto has made exhaustive researches on the antibodies that occur in the two groups and has reached the conclusion that for the development of idiosyncrasy a certain sensitization, together with a predisposition, is the cause. He has found that the antibodies in the idiosyncratic person and in the person with serum sickness are closely related, but that there is a difference in their sensitization capacity for animals.

German Scientific Researches in Russia

The cooperative work of the Notgemeinschaft der deutschen Wissenschaft and the soviet union has made progress. In Moscow, a center for ethnopathologic research has been established and has done some research on goiter. In recent months, Dr. Hamperl has carried out some research there on gastric ulcer. These researches are to be developed in a wider geographic area by a study tour of Prof. Karl Vogt, director of the Kaiser-Wilhelm-Institut für Hirnforschung in Buch, near Berlin, and Ludwig Aschoff, director of the pathologic institute at the University of Freiburg (im Breisgau). The two scientists have gone to Moscow and to Georgia, Transcaucasia, respectively, the latter at the request of the government of Georgia. In the Caucasus, biologic-genetic investigations are planned, and will form part of extensive ethnopathologic and

ethnobiologic researches. In conjunction therewith, research authorized by the German ministry of the interior on the distribution of epizootic diseases in the soviet union will be carried out in connection with the problems of animal husbandry.

The Martin Luther Hospital

It is common knowledge that, in recent years, Berlin has suffered from mismanagement of municipal affairs such as formerly would not have been thought possible. It finds its expression in an unheard-of lack of funds for the most necessary things. For athletic fields, the hygienic value of which cannot be denied, money appears to be available, but not for hospital buildings. At last, it looks as if municipal finances were taking on a more healthy tone and that the incubus of politics were being shaken off. Owing to the condition of the treasury, the city can hardly be expected to build hospitals at present and has had to postpone the erection of buildings already planned. In this time of stress, charitable organizations have come to the rescue. The first hospital of the Verein zur Errichtung evangelischer Krankenhäuser, with 450 beds, has now been opened. The bed groups (twenty beds each) are directly contiguous to the treatment area, which is centrally located. The sickrooms contain one, four or six beds. In addition to six operating rooms for aseptic and septic patients, the delivery room and private rooms for parturients, there are special rooms for the eye, ear, nose and throat specialists. An x-ray department, a hydrotherapeutic department in ten rooms of the basement, eight laboratories and a small, well equipped pathologic institute permit scientific work. The building cost 22,000,000 marks ($5,236,000). The department of internal medicine is under the directorship of Professor Munck, while Professor Baetzner is director of the surgical department.

TURKEY

(From Our Regular Correspondent)

Ankara, April 20, 1931.

Government Control of Mineral Waters

Turkey has an abundant supply of mineral waters and hot springs. There are some in almost every province, of which there are sixty-three at present. With the exception of a few, these waters have never been exploited. The people call these waters "sour waters" and most people do not use them. The best known springs are those of Brussa, Yalova Havsa, Ilidja and Hassan Kale and the mineral waters of Afyon Kara-Hissar and Kissarna. Lately the government has taken a renewed interest in the Brussa and Yalova springs, where extensive improvements have been made. Brussa became the first capital of Turkey about 600 years ago. The springs there contain sulphur, iron and carbonate. The Yalova springs are said to be radioactive. The Red Crescent is for the benefit of the society exploiting the alkaline mineral waters of Afyon Kara-Hissar. Because of the increasing importance of the Brussa and Yalova springs especially, the ministry of health and social assistance has taken account of mineral waters and hot springs in the new public health law, which reads as follows:

Though permission for the exploitation of mineral waters and medicinal springs existing in the Turkish republic has been given in accordance with certain regulations, it will be necessary that the curative properties of these waters be decided on by the ministry of health and social assistance. Mineral waters may not be sold as such and spas may not receive persons for treatment unless their curative properties have been established and their equipment, which is to conform to scientific standards, has been approved of by the ministry of health and social assistance.

The proprietor, before putting into operation a hot or cold medicinal spring or before opening for public use the potable mineral waters of the establishment, has to make application in writing to the ministry of health. A copy of the permission issued by the ministry, a plan drawn by an engineer representing on a scale of 1:200 a circle of at least 500 meters in diameter around the spring, a declaration concerning the physical and chemical properties and the quantity of the water, the process by which it is obtained, a drawing and description of the existing or projected establishment, and an analysis must accompany the application. The ministry may procure through special agents samples of the water and have another analysis made at the expense of the applicant. Mineral waters and medicinal springs at present in operation are subject to the same regulations. Proprietors and leaseholders are to return these documents to the ministry of health and social assistance within one year from the promulgation of this law.

Mineral waters and medicinal springs are subject to control by the ministry of health and may be inspected at any moment. A cooperative attitude is expected of proprietors of such establishments.

Addition to mineral waters sold in special receptacles of any chemical substances or gaseous matter other than those of its natural composition is prohibited. In order to augment the quantity of certain gases present in the mineral water it is permitted to add gas of the same quality, but an announcement to that effect has to be made to the ministry of health and a statement on the receptacle that artificial gas has been added.

Proprietors of mineral waters and medicinal springs the curative value of which has been investigated may claim the establishment of a zone of protection around such waters. This requires a written application to the ministry of health and social assistance. Such application must contain an explanation of the motives and state the number of persons that have applied for treatment. The ministry of health together with the ministry of national econmy is to make the investigations relative to such application, make a study of the locality, decide on the public utility of such waters, and determine the limits of the protective zone. Subterranean works and drillings of any kind are prohibited within the limits of such protective zone. According to the purpose of the establishment and the number of patients applying for treatment, the ministry of health and social assistance may demand of the proprietor the employment of a medical specialist duly recognized as such by the ministry and on whom rests the scientific responsibility. In such cases the appointment either permanent or for certain seasons only of one or more physicians according to the size of the establishment is obligatory.

The importation of mineral waters has previously to be authorized by the ministry of health. Mineral waters of which the importation has not been authorized by the ministery are not allowed to pass the customs.

It is obligatory that receptacles of artificial mineral waters and effervescents of either foreign or native origin bear a label indicating that the product is artificial. It is not permissible by means of advertisements of any kind to attribute to artificial mineral waters curative properties that they do not possess.

Cities or other localities in the boundaries or neighborhood of which exist one or more mineral waters or medicinal springs possessing curative qualities, the public utility of which has been ascertained and been officially approved of, may on the demand of their municipality and as the result of an investigation be declared a watering place or spa jointly by the ministry of health and social assistance and the ministry of national economy.

Municipalities or cities declared a watering place or spa are authorized to raise a tax on persons visiting during their season their watering place or spa. The income of such taxes is to be strictly reserved for the benefit of that city or locality and for the furnishing of adequate accommodations for repose and entertainment of persons going there for treatment. The amount of the tax to be raised is fixed jointly by the ministry of health and the ministry of national economy, on the approval of the council of ministers.

These taxes apply to persons visiting the locality declared a watering place during the season who are not residents of such places. War invalids and other persons who by government decision are entitled to free treatment and paupers are exempt from such taxes.

First Woman to Receive the Specialist Certificate in Surgery

Recently the first Turkish woman presented herself to the board of examiners for the specialist certificate in surgery. Having graduated from the Turkish medical faculty in Haydar Pasha, Dr. Suad Rasim Hanim spent three years as assistant on the surgical staff of the Haseki woman's hospital in Istanbul. Suad Rasim Hanim has now received an apointment as assistant surgeon at the Chichli children hospital.

BUENOS AIRES

(From Our Regular Correspondent)

March 18, 1931.

Undulant Fever in Argentina

To determine the relation of contagious abortion observed among cattle to the existence of undulant fever in human beings, bacteriologic studies have been made at the Instituto Bacteriológico of the National Department of Hygiene of Buenos Aires. Dr. D'Alessandro isolated *Brucella abortus* from a bovine fetus from Buenos Aires. The results of his experiments were reported in an article published in *La Semana Médica* (**37**:1075 [April 24] 1930). Dr. Miravent later obtained cultures of the same bacteria from the blood of a patient of Buenos Aires. Drs. Destéfano and Muzzio obtained serologic reactions positive for *B. abortus* in a patient in Santa Fé. Dr. Fernández Ithurrat succeeded in isolating *Brucella melitensis* from the blood of a patient. Drs. A. Sordelli, de la Barrera, D'Alessandro, Iñón, Molinelli and some others made a trip to study undulant fever in the province of Mendoza. Among twenty-eight cases in human beings which they suspected of being undulant fever, in nine cases the clinic and serologic diagnosis of undulant fever could be made, in six by means of the agglutination test and in three by means of cultures. In a small ranch a family of a couple with eight children kept about 200 goats and they made cheese. It was found that three persons of the family and 30 per cent of the goats were infected. In the roads between Argentina and Chile, many foci of infection with *B. abortus* were discovered. An investigation to discover the presence of the infection was made in eight herds, three of which had infected animals. The serologic results were positive in from 19 to 30 per cent of the animals of these three herds. The seroreaction made in forty bovines by means of Huddleston's antigen gave positive results in thirteen animals, or 32 per cent.

New By-Laws in Universities of Argentina

Students at the school of law of Buenos Aires recently called a strike and caused disturbances while the government board of the university held a meeting. To put an end to the frequent disturbances caused by the students, the national government designated an official delegate to intervene. The students decided that a general strike of all the universities in Argentina should be called immediately at the time of examinations, but the preventive measures both of the faculty and of the government caused the strike to fail. The faculty informed the students that a new statute for the government of the universities had been approved by the national government, by which they were not allowed to intervene in the appointment of counselors and dean of the faculty. Students now can appoint two senior representatives who have had a distinguished scholastic standing, who may present before the university authorities the wishes and needs of the students but who have no right to vote. After a trial experience of thirteen years, the policy of the election of members of the faculty made by the students came to an end. The beforementioned system in the organization of the faculty has been a failure in Argentina. The board of directors of the Faculty of Medicine of Buenos Aires, in order to facilitate the necessary reforms in the organization of the faculty due to the present status of the affair, presented its resignation, which was accepted. Drs. Schweizer, Bonorino, Castex, Marotta, Houssay, Perez, Imaz, Rumi and Carrea belong to the group of the board of directors of the faculty who resigned. Dr. Juan C. Navarro has been appointed by the government to take charge of the faculty while new appointments for authorities are being made.

Congress of Medicine

The fourth National Congress of Medicine will be held at Buenos Aires under the auspices of the national government of Argentina, in the near future. Dr. José Arce will be the president and Drs. F. C. Arrillaga, G. Bosco, C. Fonso Gandolfo, O. Ivanissevich, A. Lacroze and R. Novaro secretaries. The program will be divided into nineteen sections: medical clinics, therapeutics and pharmacology, pediatrics and puericulture, neurology and psychiatrics, dermatology and syphilology, phthisiology and infections, surgery and orthopedics, obstetrics and gynecology, ophthalmology, otorhinolaryngology, urology, roentgenology, normal and pathologic physiology and anatomy, microbiology and parasitology, hygiene and social medicine, legal medicine and toxicology, pharmacy, odontology, and medicine in the army and navy. The official topic of the congress will be: "Treatment of Acute Pyogenic Infections."

Child Welfare

Several centers of welfare for mothers and infants have been recently opened by the national department of hygiene of Argentina at Santa Rosa. There will be for mothers a center of social service, a clinic for prenatal care, a working home for abandoned mothers and for poor mothers, a maternity hospital and a public dining room. The welfare service for children will include centers of care for infants, a clinic with outpatient departments for puericulture and pediatrics, a dining room, and homes for children and for abandoned minors.

Personal Items

Drs. Borda, O'Farrell, Viñas and Velarde, professors of psychiatrics, obstetrics, surgical clinics and obstetrics, respectively of the University of Buenos Aires, were exempted from duty after having reached the limit of age.

Dr. D. Speroni, professor of Semeiology, of the Faculty of Medicine of Buenos Aires, has resigned.

Dr. G. Schiavone obtained the Angel M. Centeno prize for his article on pediatrics on tuberculosis in children.

Drs. R. Buzzi, G. Peco, C. Waldorp, S. Celsi and C. T. Rietti were appointed substitute professors of surgery, medical clinics, medical pathology, physiology and analytic chemistry at the Faculty of Medicine of Buenos Aires.

Drs. J. F. Borda and D. Greenway were appointed members of the National Academy of Medicine. Dr. Borda was appointed honorary professor of the Faculty of Medicine of Buenos Aires.

Marriages

BENJAMIN FRANKLIN PHILLIPS, Quantico, Va., to Miss Julia Watson Sinclair of Marion, N. C., March 16.

CHARLES LINWOOD SAVAGE, Sanatorium, Va., to Miss Selma Repass of Bluefield, W. Va., in April.

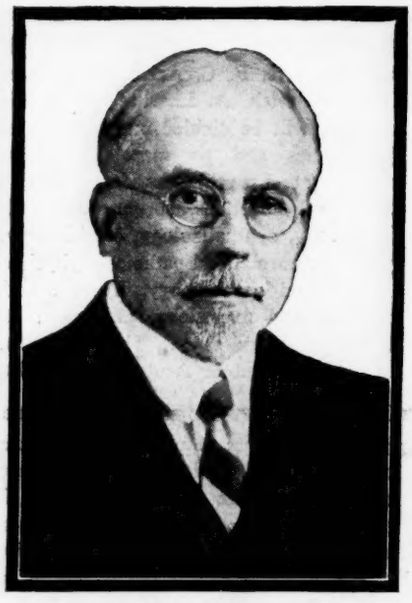
DONALD SNEAD DANIEL to Miss Josephine Townsend Moore, both of Richmond, Va., April 18.

JOHN ROLAND ELLISON, JR., to Miss Julianne Butler, both of Suffolk, Va., April 18.

CHARLES B. MARTIN to Miss Ruth Davis, both of Danville, Va., April 4.

Deaths

Aldred Scott Warthin ⊕ professor of pathology, and director of the pathological laboratory, University of Michigan Medical School, Ann Arbor, died suddenly, May 23, aged 64. Born in Greensburg, Ind., Dr. Warthin, on obtaining a medical degree from the University of Michigan Medical School in 1891, at once became an assistant in internal medicine; he was a demonstrator of internal medicine, 1892-1895, demonstrator of pathology in 1896, instructor in 1897, assistant professor in 1899, junior professor in 1902 and since 1903 has been professor, and director of the pathological laboratory at his alma mater. He was a member and in 1908 president of the American Association of Pathologists and Bacteriologists; president of the International Association of Medical Museums, 1910-1913, and vice president of the American Section in 1914; member of the council in 1921-1928 of the Association of American Physicians, vice president, 1926-1927, and president, 1927-1928; president of the American Association of Cancer Research, 1927-1928; vice president of the International Medical Historical Society, 1929-1930; member of the Association of Experimental Pathology, vice president, 1922-1923, and president in 1924. He was also a member of the International Association for the Study and Prevention of Tuberculosis, American Heart Association and the Society of Experimental Medicine and Biology, and was a delegate to the National Research Council, 1925-1928. He was one of the first members of the Council on Physical Therapy of the American Medical Association. Dr. Warthin was the author of "Practical Pathology," "Old Age—The Major Involution," "The Creed of a Biologist," and more than 1,000 articles on medical subjects, the most notable of which represented research on the anatomy and pathology of the hemolymph glands, and the pathology of diseases of the blood and blood forming organs, latent syphilis and tuberculosis. Since 1924, Dr. Warthin had been editor of the *Annals of Clinical Medicine*, now called *Annals of Internal Medicine*.



ALDRED SCOTT WARTHIN, M.D.
1866-1931

Herman A. Haubold ⊕ New York; Bellevue Hospital Medical College, New York, 1889; clinical professor of surgery, New York University Medical College; Spanish-American War veteran; on the staffs of the Broad Street and Harlem hospitals, New York, Nassau Hospital, Mineola, and St. Mary's Hospital, Passaic, N. J.; author of "Preparatory and After Treatment of Operative Cases," and "Principles and Practice of Surgery"; aged 63; died, May 5.

Henry James Prentiss ⊕ Iowa City, Iowa; Bellevue Hospital Medical College, New York, 1898; professor and head of the department of anatomy, histology, embryology and neuroanatomy, and director of the laboratories of histology and embryology, State University of Iowa College of Medicine; member of the American Association of Anatomists; aged 63; died, May 17, of heart disease.

Arne Oftedal ⊕ Fargo, N. D.; Medical Department of Hamline University, Minneapolis, 1901; president of the state health council of the North Dakota Department of Public Health; on the staff of St. Luke's Hospital; aged 51; died, April 9, of pneumonia.

Charles Morris Wooster, San Diego, Calif.; Medical Department of the University of the City of New York, 1879; member of the Connecticut State Medical Society; aged 74; died, April 1, of diabetes mellitus, acute nephritis and partial intestinal obstruction.

Robert Francis Zimmerman, Utica, N. Y.; Syracuse University College of Medicine, 1912; aged 39; on the staffs of the Utica (N. Y.) State Hospital and the Newton Memorial Hospital, Cassadaga, N. Y., where he died, April 22, of pulmonary tuberculosis.

Hugo Frederick August Baske ⊕ Surg. Lieut. Commander, U. S. Navy, Managua, Nicaragua, Central America; University of Louisville (Ky.) School of Medicine, 1917; served during the World War; aged 40; was killed, March 31, in an earthquake.

Leon Francis Barbazette, Terre Haute, Ind.; St. Louis University School of Medicine, 1915; member of the Indiana State Medical Association; on the staff of St. Anthony's Hospital; aged 40; died, May 1, in Phoenix, Ariz., of chronic myocarditis.

James Henry Mitchell, Cohoes, N. Y.; Albany Medical College, 1881; member of the American College of Surgeons; at one time mayor of Cohoes; formerly on the staff of the Cohoes Hospital; aged 74; died, April 19, of carcinoma of the prostate.

James George Grafft, Middletown, Ohio; Miami Medical College, Cincinnati, 1893; member of the Ohio State Medical Association; on the staff of the Middletown Hospital; aged 64; died, April 28, as the result of injuries received in a fall.

William S. Weissinger, Hernando, Miss.; Medical Department of the University of Louisiana, New Orleans, 1871; member of the Mississippi State Medical Association; Confederate veteran; aged 83; died, April 15, of chronic myocarditis.

John Harris Forster Mullett, Williamston, Mich.; University of Michigan Medical School, Ann Arbor, 1900; aged 61; died, March 8, of acute endocarditis and chronic valvular disease and subacute streptococcus infection of the throat.

William Leonard Kimbrough, Linden, Ala.; Medical Department of the Tulane University of Louisiana, New Orleans, 1881; member of the Medical Association of the State of Alabama; aged 72; died, April 22, of pneumonia.

Joseph Gilbert Good ⊕ Northampton, Pa.; Universita Komenskeho Fakulta Lekarska, Bratislava, 1921; aged 43; died, May 5, in the Reconstruction Hospital, New York, of pneumonia, following an operation on the gallbladder.

John Walter Kepner ⊕ Kansas City, Mo.; University Medical College of Kansas City, 1902; on the staff of the Willows Maternity Sanatorium; aged 56; died, April 30, of arteriosclerosis, chronic nephritis and myocarditis.

Herman G. Heilig, Asheville, N. C.; University of Maryland School of Medicine, Baltimore, 1899; member of the Medical Society of the State of North Carolina; aged 53; died, April 26, of a self-inflicted bullet wound.

Cyrus Hamlin ⊕ Brooklyn; Long Island College Hospital, Brooklyn, 1894; on the staffs of the Samaritan, St. Mary's and the Brooklyn hospitals; aged 61; died, May 3, as the result of cutting his wrists with a razor blade.

John C. Williams, Kilbourn, Wis.; Rush Medical College, Chicago, 1894; formerly on the staffs of the Chicago Memorial and the Illinois Masonic hospitals, Chicago; aged 64; died, April 19, of cerebral hemorrhage.

George David Mason, Lumberton, Miss.; University of Tennessee College of Medicine, 1910; member of the Mississippi State Medical Association; aged 42; died, April 26, of pneumonia, followed by encephalitis.

James A. Craig, Westmoreland, N. H.; University of Vermont College of Medicine, Burlington, 1885; member of the New Hampshire Medical Society; aged 76; died, April 9, of coronary arteriosclerosis.

Robert D. Humphries, Vinemont, Ala.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1892; member of the Medical Association of the State of Alabama; aged 72; died suddenly, March 14.

Horace N. Wells, Murphy, N. C.; Vanderbilt University School of Medicine, Nashville, 1889; University of Nashville Medical Department, 1889; aged 81; died, March 10, of pneumonia.

James Alexander Davis, Pittsburgh; Jefferson Medical College of Philadelphia, 1890; member of the Medical Society of the State of Pennsylvania; aged 63; died, April 5, of lobar pneumonia.

Henry Lane F. McCoy, Smethport, Pa.; University of Buffalo School of Medicine, 1868; member of the Medical Society of the State of Pennsylvania; aged 84; died, January 17.

James Alexander Dickson, Poland, Ohio; University of Michigan Medical School, Ann Arbor, 1883; Jefferson Medical

College of Philadelphia, 1889; aged 72; died, April 20, of heart disease.

Michael Allen Rebert, New York; University of Pennsylvania School of Medicine, Philadelphia, 1882; aged 71; died, March 18, in the Presbyterian Hospital, of heart disease.

Daniel Edward Drennen ✠ Hot Springs National Park, Ark.; Medical College of Alabama, Mobile, 1894; aged 58; died, April 3, of hemorrhage from the hemorrhoidal veins.

Herbert Alton Lombard, Bridgton, Maine; Medical School of Maine, Portland, 1886; member of the Maine Medical Association; aged 68; died, April 3, of cerebral hemorrhage.

Albert Winn, Los Angeles; Medical Department of Columbia College, New York, 1884; member of the California Medical Association; aged 71; died, March 20, of myocarditis.

Saul Charles Greenwald ✠ Chicago; University of Illinois College of Medicine, Chicago, 1915; aged 39; died, May 15, of cardiac decompensation and cerebral embolism.

Alan Bernard Greenwood, Niagara-on-the-Lake, Ont., Canada; University of Toronto Faculty of Medicine, 1894; aged 56; died, February 15, of cerebral hemorrhage.

William Stephen Driscoll, Buffalo; University of Buffalo School of Medicine, 1906; served during the World War; aged 48; died suddenly, April 16, of heart disease.

Miles B. Jones, Richmond, Va.; Howard University School of Medicine, Washington, D. C., 1901; aged 69; died, April 9, of parenchymatous nephritis, uremia and neuritis.

James Prescott Thorne ✠ Janesville, Wis.; Northwestern University Medical School, Chicago, 1890; aged 62; died, April 11, of chronic myocarditis and thrombosis.

Thomas Bryant Bonner, Lavonia, Ga.; Southern Medical College, Atlanta, 1894; aged 68; died, April 10, of cerebral hemorrhage and dilatation of the heart.

William Simons ✠ Summerville, S. C.; Medical College of the State of South Carolina, Charleston, 1919; aged 35; died, March 27, of lobar pneumonia.

Floyd Wilbur Hancock, Bedford, Ky.; Hospital College of Medicine, Louisville, 1898; aged 56; died, in April, following an operation for appendicitis.

O. Baxter Howe, Woodstock, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1878; aged 78; died, April 15, of acute myocarditis.

Henry C. Demaree, Buhl, Idaho; Kentucky School of Medicine, Louisville, 1879; aged 81; died, March 28, of hemorrhage due to duodenal ulcer.

Albert H. Laros, Northampton, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1903; aged 51; died, April 5, of heart disease.

Daniel W. Coker, Dubbs, Miss.; Memphis (Tenn.) Hospital Medical College, 1892; aged 66; died, in March, at New Albany, of cerebral hemorrhage.

Ralph Sidney Baynes, Hurdle Mills, N. C.; College of Physicians and Surgeons, Baltimore, 1881; aged 76; died, April 9, of pneumonia.

Samuel M. Griffin, Danbury, Conn.; Homeopathic Medical College of the State of New York, 1867; aged 87; died, March 11, of gangrene.

William Thomas Lucas ✠ Santa Maria, Calif.; Cooper Medical College, San Francisco, 1876; aged 81; died, March 21, of bronchopneumonia.

Harry Buckley Fasig, Los Angeles; College of Physicians and Surgeons of San Francisco, 1897; aged 71; died, March 6, of angina pectoris.

Milton L. Fritch, Virginville, Pa.; Jefferson Medical College of Philadelphia, 1871; aged 85; died, March 14, in Reading, of nephritis.

George Francis Brackett, San Francisco; Cooper Medical College, San Francisco, 1892; aged 60; died, March 21, of acute encephalitis.

Orrin Augustus Gee, Brandon, Vt.; New York Homeopathic Medical College, 1881; aged 73; died, May 1, of glandular prostatitis.

S. H. Robinson, Melrose, Texas; University of Tennessee College of Medicine, 1889; aged 74; died recently, of cerebral hemorrhage.

James A. Ashford, Bolton, Miss. (licensed, Mississippi, year unknown); aged 80; died, March 26, of diabetes mellitus.

Frank Leslie Burt, Boston; Harvard University Medical School, Boston, 1885; aged 73; died, April 5, of heart disease.

Henry S. Preston, Urbana, Ohio; Columbus Medical College, 1876; aged 87; died, February 14.

Bureau of Investigation

EARLE LIEDERMAN

One of the "Big Muscle Boys" Is Ordered to Cease and Desist

The Federal Trade Commission has, as the medical profession knows, been doing some excellent work in the medical field by curbing the activities of some of the faddists, quacks and nostrum exploiters. The Commission has been able to attack certain abuses in the medical field that could not be reached by the postal authorities under the fraud order powers, or by the Department of Agriculture under the powers given it by the Food and Drugs Act.

One of the latest orders issued by the Federal Trade Commission has been in the matter of one Earle Liederman, one of the bare-torso, big-muscle persons, whose advertising might

January, 1931 81

If You Were
DYING TO-NIGHT

A Re-Built Man

All I Ask Is Ninety Days

A Real Man

EARLE LIEDERMAN, the Muscle Builder

Send For My New 64 Page Book "Muscular Development" IT IS FREE

EARLE LIEDERMAN
Dept. 75 305 Broadway, New York City

DON'T SEND ONE PENNY

YOUR NAME AND ADDRESS ON A POSTAL WILL DO

IT IS FREE

A typical Liederman advertisement. In the original this occupied a full page of *Physical Culture* for January, 1931.

lead a puny store-clerk to believe that by purchasing Liederman's "course," he may become a second Sandow. Liederman was one of the persons dealt with in "The Big Muscle Boys" series published in *Hygeia* in 1925. Thus:

> "Mr. Earle Liederman offers you ten more years of life. 'I don't claim to cure disease,' he says. 'I am not a medical doctor but I'll put you in such condition that the doctor will starve to death waiting for you to take sick.'
>
> "Earle Liederman fixes you up in ninety days and he requires two pages of advertisements to tell you about it —one devoted to Mr. Liederman *a la naturel* and the other to his announcement. When Mr. Liederman is through with you, you are a real man, he says. He tells you about your deep, full chest, your huge, square shoulders, your massive, muscular arms, the flash to your eye and the pep to your step.
>
> "All you have to do is to send for his booklet, 'Muscular Development.' It contains, as by this time you will have come to expect, forty-three full page photographs of himself and his pupils. There are the bare-torso photographs in every conceivable posture, and there are six bare-torso

pupils. Then at last there is a letter asking $28 in cash or on time. It is the same old postal money-order blank, the same old imitation personal letter, the same old questions and the same old mention of the necessary apparatus. And, if you fail to bite, finally there come to you week by week the same old follow-up letters."

In March, 1930, the Federal Trade Commission issued and served a complaint against Liederman, charging him with unfair methods of competition in commerce, in violation of the Act that created a Federal Trade Commission. In February, 1931, the case came up for hearing before a Trial Examiner, and testimony was heard and evidence received in support of the charges made by the Commission and in opposition thereto. The Commission reported its findings in the case in due course. These were to the effect that Earle Liederman had for some years been engaged in New York City in conducting a correspondence school for physical culture. In this business, he had sold "lessons" or "courses of instruction," together with books and pamphlets and also certain appliances to be used in following out the instructions. The price of the "course," as stated in the first six letters of Liederman's follow-up series, was given as $37. Those who have not swallowed the bait by the time the sixth letter arrived received a seventh letter, in which the same "course" is offered for $19! The letter in which this reduction was made, was, according to the Commission, misleading and deceptive in that it gave the recipient the belief that a special, unusual, personal and confidential price had been made to him, when, as a matter of fact, the reduction from $37 to $19 was made to all those who did not send in the money before receiving the seventh letter. This seventh letter also led the recipient to think that the special price would not be held open indefinitely but would have to be accepted within a certain time, or it would be withdrawn. The Commission brought out the fact that Liederman would accept offers to enroll or to purchase regardless of any time limitation, and that such limitations were wholly fictitious.

The Commission also showed that while Liederman represented and promised that the individual case of each pupil would be given careful consideration and that the course of instruction offered was prepared as a special course to meet the individual needs of the pupil, the facts were that such courses were printed or mimeographed for general and uniform use for those that purchased.

As a result of the Commission's investigation, on February 10, 1931, it ordered Liederman to cease and desist (1) from representing that any price at which any course of instruction was offered for sale was a special or reduced price or lower than the price ordinarily and usually accepted therefor; (2) from representing that offers to sell courses of instruction or other commodities were made for a limited time only when such was not a fact, and (3) from representing that any course of instruction offered for sale by Liederman was prepared for or adapted to the individual needs of the pupil when, as a matter of fact, it was prepared for general and uniform use.

CHI-HO-WA

A Fraudulent "Rheumatism Cure" Debarred from the Mails

The Chi-Ho-Wa Remedy Company of Little Rock, Ark., is a trade name employed by H. L. Jones, a former railroad engineer, in selling a so-called cure for rheumatism—"Chi-Ho-Wa." Jones also receives mail addressed "H. Jones" and "Box 147." The business was conducted from Jones' residence and consisted in the sale of an eight-ounce bottle of a preparation for which $4 was asked. There were no physicians connected with the business.

When analyzed by the federal chemists, Chi-Ho-Wa was found to be mainly alcohol and sugar, containing 46 per cent of the former. There were also certain resins and a very small amount of colchicine.

In this swindling scheme, Jones obtained his victims through newspaper advertisements, spending between $150 and $200 a month in advertising. Typical advertisements featured rheumatism and stated that Jones would gladly tell how he was cured in four days after suffering terribly for two years. Those who answered the advertisement were sent a form-letter, in which it was stated: The writer had been suddenly stricken with rheumatism in 1905 and from a healthy, active man, he was transformed to a physical wreck; about that time a friend gave him an Indian recipe which he had filled, took it for four days, and was cured! The treatment had proven satisfactory in over 95 per cent of all cases of rheumatism!

When the postoffice authorities investigated, they brought out the fact, stated in the memorandum of Mr. Horace J. Donnelly, Solicitor of the Department, to the Postmaster General, that colchicum does not grow in America and, therefore, the representation that Chi-Ho-Wa was an Indian remedy was obviously untrue. It was further brought out that colchicine is an irritant to the kidneys and the gastro-intestinal tract and prolonged administration may prove harmful. It was shown, too, that

while colchicine may be of value in cases of acute gout (if given in sufficient dosage under proper medical control) the drug has very little, if any, value in chronic gout and has no recognized effect in the reduction of pain. It was brought out further at the hearing that the other drugs in the preparation were also unknown to the Indians.

The Solicitor in his memorandum pointed out that what is called "rheumatism" may arise from many different causes and that a stock preparation will not, and cannot, except accidentally, even relieve pain, much less produce a cure. In short, the scheme was fraudulent. The gross business done by Jones last year was somewhere between $4,000 and $6,000, practically all of it being done through the mails. Mr. Donnelly recommended that a fraud order be issued against the Chi-Ho-Wa Remedy Company, H. Jones, their officers and agents, and Box 147, all at Little Rock, Ark. Such an order was issued by the Postmaster General February 24, 1931.

Correspondence

"SPINAL ANESTHESIA EXCLUDING THE MOTOR NERVES"

To the Editor:—The fact that local anesthetics more readily influence sensory nerves than motor nerves, as noted in spinal anesthesia by Dr. Edward J. Martin (THE JOURNAL, April 4, p. 1168), has been long recognized pharmacologically. For example, Sollmann (Manual of Pharmacology, ed. 3, Philadelphia, 1926, p. 325) states, in discussing local anesthetics, "Sensory fibers are especially easily attacked; and by using appropriate dilutions, the paralysis can be confined strictly to them." In most pharmacologic laboratories, medical students have the opportunity to demonstrate for themselves this differential effect of local anesthetics on various nerve fibers. It is encouraging that clinical application of this fact can be made in spinal anesthesia, especially since it may tend to reduce the amount of local anesthetic agent used for spinal anesthesia and perhaps in this way help to lower the incidence of local anesthetic toxicity.

I cannot let this opportunity pass without a protest against the use of such a confusing and misleading term as "spinocaine." The termination "caine" is generally applied to some definite chemical agent having local anesthetic properties. To use it in connection with a trade-name for a complex mixture of various materials is unscientific and unwarranted. Against the particular mixture proposed by Pitkin, for which the term

was coined, severe criticism might be directed from the pharmacologic standpoint for including such a spinal irritant as strychnine. It would be desirable to have this entire problem of spinal anesthesia investigated critically by competent clinicians working in connection with qualified pharmacologists and chemists.

C. D. LEAKE, PH.D., San Francisco.

To the Editor:—I have noted in THE JOURNAL, April 4, page 1168, the excellent suggestions of Dr. Edward G. Martin in reference to "Spinal Anesthesia Excluding the Motor Nerves" and I am happy to be able to confirm his observations for I have been using small doses (from 40 to 70 mg.) of procaine intraspinally since October, 1929.

There is another decided advantage, I believe, which the intradural administration of procaine makes available, when the procedure permits, and that is the use of the ventral posture. The lateral (Sims) and dorsal postures are not ideal for anorectal treatments. Surgical treatment of the anus and rectum can be executed with comfort to the patient and with greater ease to the surgeon when the patient is placed in a ventral, semiflexed posture. With the patient lying prone on the table this can be effected by "breaking the table" so as to lower the head and to flex the hip joint. This posture is safe for the patient and advantageous to the surgeon.

JOSEPH HORGAN, M.D., Washington, D. C.

To the Editor:—In THE JOURNAL, April 4, page 1168, appears a communication from Dr. Edward G. Martin of Detroit on "Spinal Anesthesia Excluding the Motor Nerves." I should like to call attention to my article on Intradural Caudal Anesthesia, which appeared in THE JOURNAL, January 10, page 91. I believe this article will answer all the questions raised by Dr. Martin.

GEORGE H. EWELL, M.D., Madison, Wis.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CONGENITAL SYPHILIS

To the Editor:—I have four children, aged 12, 8, 3 and 1, who have syphilis. Please describe the best method of treatment.

M.D., North Carolina.

ANSWER.—It is assumed that the four children have congenital and not acquired syphilis. What should be done about it depends on a number of details which are not supplied, for example, whether any of the children have lesions of syphilis such as interstitial keratitis or eighth nerve deafness; whether there are any complicating diseases other than syphilis; whether the general physical status and state of development and nutrition are approximately normal or otherwise; whether there are any evidences of central nervous system syphilis, either clinical or serologic in any of the children. Assuming, however, that the diagnosis of syphilis in these four children rests on the presence of a positive blood Wassermann reaction only, that there are no outspoken lesions, no complicating diseases, no evidences of neurosyphilis, and that the children are in good physical condition, the two eldest children, aged 8 and 12, might best be treated by the same sort of treatment system as one would apply to an adult with latent syphilis. Neoarsphenamine had better be used instead of old arsphenamine because of its ease of administration to patients with small veins, and because of its relative freedom from annoying, mild, immediate or slightly delayed reactions. The dosage will depend on body weight and should not exceed 20 mg. per kilogram of weight, or a maximum of 0.45 Gm. for the oldest child. Courses of eight weekly injections each of neoarsphenamine should be separated by courses of eight to twelve weekly intramuscular injections of an insoluble bismuth salt, in a dosage again depending on body weight, but probably not exceeding 0.1 Gm. The blood Wassermann test should be made at the beginning and end of each course of neoarsphenamine. Treatment should be continuous without rest periods and should be kept up for a year after the blood Wassermann reaction has become and has remained negative or, in any event, for a minimum of two years. It is quite likely that it will not be possible to obtain a negative blood Wassermann reaction, since Wassermann fastness is common in late congenital syphilis. Even if there are no clinical evidences of neurosyphilis, the spinal fluid should be regularly examined in all the children.

The two younger children, aged 3 and 1, should be managed in much the same way as an adult with a recent syphilitic infection. Sulpharsphenamine is preferable to any of the arsphenamine products because it may be given intramuscularly. The dosage should be from 15 to 25 mg. per kilogram of body weight, beginning with the former and increasing rapidly to the latter. Injections may be given weekly in the alternate buttocks, and an average course consists of eight such injections. The interval between courses of sulpharsphenamine should be occupied by two to three months of mercury by inunction. It is much more likely that the blood Wassermann reaction can be rendered negative in the younger than in the older children. In order to provide for an accurate control of treatment, the blood Wassermann test should be made on these younger children at least as often as every three months, and treatment should be continued for a minimum period of one year after the test becomes negative; or, if it fails to do so, for a minimum period of two years, as in the case of the older children.

On completion of treatment, all these children should be carefully observed, if possible until they have passed through adolescence and early adult life. Relapses in the form of interstitial keratitis or of eighth nerve deafness are unfortunately not uncommon even in spite of prolonged antisyphilitic treatment.

More detailed advice than this would depend on full information as to the physical status of each of the children. It goes without saying that, should the mother of these children again become pregnant, she ought to be energetically treated for syphilis during her pregnancy.

"PANIMMUNITY"

To the Editor:—In the editorial "Panimmunity" (THE JOURNAL, March 7, p. 775), the following sentence occurs: "Arguments against previous subclinical infections as a cause of such adult immunities have been drawn from a study of Eskimo children. These isolated children apparently develop the same percentage immunity to diphtheria toxin as children in more crowded environments, diphtheria bacilli being practically unknown in arctic regions." I would appreciate very much having the reference to the original work to which this refers if it is readily available.

R. D. DEFRIES, M.D., Toronto.

ANSWER.—There is a rapidly growing literature on the phenomenon of "serologic ripening," "serologic involution" and "serologic mutation." Friedberger and Gajzágó's recent paper on "Antibodies in Normal Rabbits of Different Age-Groups" (*Ztschr. f. Immunitätsforsch. u. exper. Therap.* **67**:67 [June] 1930) gives references to most of the earlier nonclinical papers. The clinical literature was summarized in this earlier paper on the Schick and Dick reactions (*ibid.* **64**:294, 1929). Among the earlier clinical references is one to Bay-Smith's data with Eskimo children (*Klin. Wchnschr.*, 1929, number 21, p. 974). Sufficient references were given in the editorial for one to verify all the statements made.

USE OF GLANDULAR PREPARATIONS IN STERILITY

To the Editor:—What glandular extracts on the market have proved of value in the treatment of sterility due to hypoovarism as evidenced by scanty menstruation and diminished sexual desire? What is the best mode of administration? Please omit name.

M.D., Florida.

ANSWER.—Unfortunately there is no specific treatment for the condition mentioned in spite of the glowing advertisements of manufacturers of glandular products. The ovaries are, of course, essential for menstruation and pregnancy, but other glands of internal secretion play an important part in these processes. The most vital one of the other glands is most likely the hypophysis, but the thyroid is likewise important. The hypophysis has been called the "motor of the ovary" because of its domination of the ovaries. In cases similar to the one mentioned, good results seem to have been obtained in some cases by oral administration of preparations of the anterior lobe of the pituitary or thyroid preparations or both. Large doses of pituitary substance are necessary and before much thyroid is prescribed one or more basal metabolism tests should be made. The results, however, are by no means constant. The best results are obtained with pituitary preparations in cases in which hypoplasia of the uterus is present, and the greatest success with

thyroid is seen in patients with low basal metabolic rates. Ovarian preparations seldom help, regardless of whether they are given by mouth or hypodermically. Follicular fluid sold under various trade names apparently helps a few of these patients, but to be effective at all it must be given hypodermically in large doses. The oral administration of these preparations is usually without effect. Roentgen treatment is occasionally curative but this therapy should be given only by an experienced roentgenologist under the supervision of a gynecologist.

HEALTH HAZARD OF LACQUER DYES USED AS A SPRAY

To the Editor:—Is there any health hazard connected with the occupation of dyeing shoes with lacquer leather skin shoe dyes when used as a spray? Please omit name.

M.D., Florida.

ANSWER.—Shoe dyes have caused many cases of poisoning resulting from a content of aniline or nitrobenzene. A great number of these accidents have occurred from the wearing of shoes prior to complete drying of the dyes. Shoe shining stands, rather than shoe factories, have been the source of the greater number of these poisonings. The present inquiry, however, apparently refers to a new process in shoe manufacturing, whereby the finished shoe is sprayed with a lacquer coating. The basic substance of these lacquers is nitrocellulose or some kindred substance. The solvents employed are variable as to type, and as to percentage of various constituents. The following list includes the agents most likely to be employed:

ethyl acetate	butyl alcohol
butyl acetate	naphtha
amyl acetate	xylene
glycol	benzene
methyl alcohol	toluene

Of these, benzene, xylene, toluene, methyl alcohol and butyl alcohol are definite intoxicants. The threshold of danger for benzene is a concentration of about 100 parts of vapor per million of air. The threshold for methyl alcohol danger by inhalation is about 500 parts of vapor per million of air. The continuous spraying of shoes with these lacquers constitutes a dangerous trade, unless due precaution is taken to avoid dangerous concentration of vapors. Booths are ordinarily required for lacquer spraying.

LOW BLOOD PRESSURE

To the Editor:—A man, aged 55, complains of weakness, shortness of breath, dizziness, inability to sleep at night, poor eyesight (he wears glasses), impaired appetite, frequent urination both day and night, general miserable feelings, nervousness, broodings, worry and low blood pressure, which he says he has had all his life or at least as long as he can remember being told so by his physicians. I have known him nearly three years and a half and his condition has little changed in that time. His blood pressure is low, so low in fact that it is hardly possible to get a reading. I have estimated it at various times between 90 and 100 systolic and about 70 diastolic. The pulse is regular, easily compressible, of small volume and at times almost imperceptible. The heart shows no enlargement; the sounds are feeble, distant and dull. There are apparently no murmurs. There is no edema, no cyanosis of the lips or extremities, and no dyspnea on walking or at rest. The peripheral arteries are tortuous, and arteriosclerosis is present. His appetite is fair. I have been at the house and watched him eat. I would say his gastrointestinal tract is normal except for some constipation. He has prostatic enlargement and obstructive symptoms, with a moderate degree of retention, but he seems to get by on this without the use of the catheter. It is no worse now than it was three years ago. The surgeons do not consider him a good risk, so it is not likely that surgery is to be considered. His Wassermann reaction is negative. The blood urea is only a little above normal, something like 20 per cent above normal. The urine is normal. He works every day as a janitor in a local factory and seems to stand it well. I have put him on various drugs as his symptoms seemed to indicate. Digitalis seems to do no good and, if anything, at times it seems to make him worse. He has been on potassium iodide 12 drops of a saturated solution, daily, strychnine, and even ergot in an attempt to raise the blood pressure. I have not tried ephedrine but have thought of it. Can you suggest anything in the way of treatment for this man? He is continually after me to do something for him and I should like to know if you have anything to suggest in such a case. Please omit name.

M.D., New York.

ANSWER.—Low blood pressure is probably of little significance of itself, and the man has evidently always had such a low blood pressure. Its significance is that of the underlying pathologic condition, when this can be determined. It is assumed that Addison's disease is ruled out, and there is nothing in the history to suggest it.

If there is any prostatic disease, with retention of urine, this should certainly receive attention, and the chances of operation carefully weighed. Delay only serves to decrease kidney function further and to increase the hazards. Without attention of some sort, trouble is almost inevitable.

There is no reason to assume that any medication directed toward the circulatory system is indicated or would be of avail. Digitalis only exceptionally raises blood pressure, and in a normal rhythm may decrease the minute volume. The bowels should receive attention, and especially so with the prostatic condition. A mild saline cathartic each morning should be considered. If the constipation is of the spastic variety, two or three glasses of hot water daily on arising, a heavy liquid petrolatum, night and morning, with agar in the morning to give bulk, will probably help.

VITAGLASS

To the Editor:—I have just been reading your answer about the status of vitaglass (THE JOURNAL, February 28, p. 711). For some time we have been guaranteeing the transmission of vitaglass. I feel that the guarantee should have been included in your answer, rather than a sentence to the effect that the purchaser should protect himself by asking for a guarantee.

There was more to the school test mentioned than appears in your answer. In the test which was made at the Shurly School, which appears in Bulletin C 119, Department of Research, Detroit Public Schools, there was a group of children, the seventh and eighth grades, in a vitaglass classroom, and a control group, the fifth and sixth grades, in an ordinary glass classroom. There were two other control groups in the seventh and eighth grades, in the Beard and Rich schools, which were separate from the Shurly School and perhaps subject to different outside conditions. Comparing the two groups in the Shurly School, the following appears in their table of mean achievement of groups expressed in school months:

Group	Initial	Final	Gain
Ultraviolet	45.8	51.1	5.3
Non-ultraviolet 5-6.....	35.6	38.5	3.0

This makes it appear that there was a distinct difference in favor of the vitaglass classroom in comparing the two groups at the Shurly School, leaving out the comparison with the control groups at the other schools under different conditions.

We feel that it would also have been fair to have pointed out the following experiences with vitaglass in other schools:

Greets Green School, West Bromwich, England: "Two groups of 36 children each were put, one in a vitaglass classroom and the other in an ordinary glass classroom for the six months from January to June, 1928. The vitaglass group had 7.8 per cent higher attendance than the ordinary glass group and gained four tenths of a pound more in average weight. The classes were then reversed and in the following six months, July to December, 1928, the backward class, with the benefit of vitaglass, gained back the difference both in attendance and weight. These results were obtained despite the fact that both groups of children were outdoors in the open most of the time daily from 11:50 a. m. to 1:30 p. m."

The Birmingham Public School, Birmingham, Mich.: "Careful tests were made of the children at the beginning and the end of the experimental periods. They were weighed and measured each month. Attendance and absences were carefully kept. After considering all the factors it was found that the group in the ultraviolet room had a better academic record, a better attendance record and had gained more on the average in height and weight than did the control group."

Board of Education, Maumee, Ohio, Jan. 10, 1929, after several months' use of vitaglass in the school: "In comparing our record of attendance with last year, it gives us a gain this year of twenty days over 1927 for the first semester—Fifth Grade: absences, 63, 1927; 43, 1928."

Smethwick School, England, summary of results of test carried out with vitaglass June to April: "Thirty boys in vitaglass classroom gained 6.11 pounds average in weight and 1.86 inches average in height as compared to 2.83 pounds and 1.22 inches, respectively, for a similar group under ordinary window glass, and absences in the vitaglass class dropped 43 per cent."

P. H. JENNINGS, New York.
President, Vitaglass Corporation.

NOTE.—The minimum requirements of the Council on Physical Therapy is that an ultraviolet transmitting glass shall have a transmission of not less than 25 per cent of the incident radiations at wavelength of 302 millimicrons after complete solarization.—ED.

USE OF QUINIDINE SULPHATE OVER EXTENDED PERIODS

To the Editor:—Is it permissible and advisable to use quinidine sulphate over an extended period of time, provided there is no enlargement of the heart and no valvular heart disease, but simply a paroxysmal tachycardia or auricular fibrillation?

J. W. HOPKINS, M.D., Glendale, Calif.

ANSWER.—Unfortunately there is little accurate and definite information available with regard to the effect of prolonged administration of quinidine sulphate. It is excreted rapidly and probably can be given in moderate doses over long periods without harm. It is a depressant, and the patient should be kept

under observation. It has happened that a patient taking moderate doses of quinidine for paroxysmal tachycardia over a period of weeks has shown evidence of cardiac edema, which disappeared when the quinidine was discontinued. Until more is known with regard to its continued administration, it is well to be cautious.

POSSIBLE USE OF ANTICOAGULANTS IN ARTERIAL SCLEROSIS

To the Editor:—The cause or mechanism of arteriosclerosis is not specifically understood. The coagulation rate postoperatively is from one to five minutes less than the average normal. In several cases of thrombosis and embolism it was noted to be as low as one minute. Of course, this varies with the method used for determinations but does not alter the fact that the ability of the blood to coagulate has increased. With this in mind and the fact that blood at all times is on the alert to coagulate, some speculation was made as to the relation of coagulation to arteriosclerosis. The mechanism of coagulation is not well understood. However, fibrin does form and begins a clot which may undergo organization and fibrosis. Is that true? If so, is it impossible to conceive that fibrin may be deposited in the small capillaries, end arteries and especially the vasa vasorum, causing the formation of minute clots gradually developing into fibrosis and resulting arteriosclerosis? If this were true, would it be advisable to treat arteriosclerotic patients with anticoagulants, and the iodides? Also, would anticoagulants be advisable for prevention, provided the coagulation rate was maintained at a safe level? Please omit name.

M.D., Pennsylvania.

ANSWER.—The known facts concerning the clotting of blood outside the body and concerning thrombosis within the vessels have not been found to apply to the pathogenesis of arteriosclerosis. Consequently any form of preventive or active treatment of arteriosclerosis based on a speculative hypothesis seems unjustifiable and not without danger. Iodides have, it is true, been used empirically with apparent benefit in vascular disease particularly of syphilitic origin. In the present state of our knowledge the clinical use of anticoagulants in the prevention or treatment of arteriosclerosis can only be condemned.

MULTIPLE SCLEROSIS WITH HERPES

To the Editor:—I have a case of multiple sclerosis in a patient, aged 43, which is of three or four years' duration, recently complicated with severe herpes of the right thigh, hip and back, otherwise a typical case of Charcot's disease. The Wassermann reaction is negative. The reflexes are exaggerated in the upper and lower extremities. Laboratory tests are essentially negative. Can you give me any new suggestions as to treatment? Please omit name.

M.D., Texas.

ANSWER.—The occurrence of herpes zoster in a patient with multiple sclerosis is probably in no way connected with the latter disease. The herpes will run the same course as it would in the absence of multiple sclerosis, and the treatment is the same as usual. It is not even likely that this patient is more prone to postherpetic neuralgia or the much rarer atrophic paralysis than patients free from multiple sclerosis.

VINCENT'S ANGINA

To the Editor:—When may one consider a case of Vincent's infection of the mouth (trench mouth) cured and nontransmissible? I have seen several cases recently that were clinically positive and which gave positive smears of the spirochete and the fusiform bacillus. These cases were treated locally and responded quickly. Dental hygiene has been well taken care of. Clinically they appear to be cured. However, all cases still show positive microscopic smears. Can these cases be considered cured? Is there any danger of transmission?

R. H. ZINN, M.D., Hundred, W. Va.

ANSWER.—A case of acute ulcerous gingivitis (trench mouth) may be considered cured when all clinicial symptoms have disappeared. The mere presence of spirochetes and fusiform bacilli has no particular significance, as they are both found in normal mouths. During the period of active inflammatory reaction there is some danger of contagion, but in the quiescent state they are harmless.

SIGNIFICANCE OF GAMMA AS MEASURE OF WEIGHT

To the Editor:—In THE JOURNAL (February 21, page 648, column 2) is an abstract of an article from the *Norsk Magasin for Lægevidenskapen*, entitled "Incidence of Goiter in Veitestranden." In this abstract there appears the symbol γ. Will you kindly advise me concerning the meaning of this symbol?

E. H. BOYER, PH.D., M.D., Clinton, Iowa.

ANSWER.—Just as for simplicity and safety μ (mu) is used to denote 0.001 millimeter, γ (gamma) is used to denote 0.001 milligram.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALABAMA: Montgomery, July 14-17. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery.

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Philadelphia, June 8. Denver, July 23. Sec., Dr. William H. Wilder, 122 S. Michigan Ave, Chicago.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: Philadelphia, June 6. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OTOLARYNGOLOGY: Philadelphia, June 8. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

CALIFORNIA: *Reciprocity Meeting.* Los Angeles and San Francisco, June 17. *Regular.* San Francisco, July 6-9. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

COLORADO: Denver, July 8-10. Sec., Dr. Wm. W. Williams, 224 State Capitol Bldg., Denver.

CONNECTICUT: New Haven, June 6. *Basic Science.* Address, State Board of Healing Arts, Box 1895, Yale Station, New Haven.

CONNECTICUT: *Regular* (written and endorsement, respectively), Hartford, July 14-15 and July 28. Sec., Dr. Thomas P. Murdock, 147 West Main St., Meriden. *Homeopathic.* July 14. Sec., Dr. E. C. M. Hall, 82 Grand Ave., New Haven.

DELAWARE: Wilmington, June 9-11. Sec., Dr. Harold Springer, 1013 Washington St., Wilmington.

DISTRICT OF COLUMBIA: *Basic Science.* Washington, June 29-30. *Regular.* Washington, July 13-14. Sec., Dr. W. C. Fowler, District Bldg., Washington.

FLORIDA: Jacksonville, June 15-16. Sec., Dr. Wm. M. Rowlett, 812 Citizens Bank Bldg., Tampa.

GEORGIA: Atlanta and Augusta, June 10-12. Sec., Dr. B. T. Wise, Americus.

ILLINOIS: Chicago, June 23-25. Supt., Mr. Paul B. Johnson, Springfield.

INDIANA: Indianapolis, June 23-25. Sec., Dr. Wm. R. Davidson, 413 State House, Indianapolis.

IOWA: Iowa City, June 2-4. Dir., Mr. H. W. Grefe, Des Moines.

KANSAS: Topeka, June 16. Sec., Dr. C. H. Ewing, Larned.

KENTUCKY: Louisville, June 9-11. Sec., Dr. A. T. McCormack, 532 West Main St., Louisville.

MAINE: Augusta, July 7-8. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

MARYLAND: Baltimore, June 16-19. *Regular.* Sec., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore. *Homeopathic.* Baltimore, June 16-17. Sec., Dr. John A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: Boston, July 14-16. Sec., Dr. Frank M. Vaughan, 144 State House, Boston.

MICHIGAN: Ann Arbor and Detroit, June 15-17. Sec., Dr. F. C. Warnshuis, 1010 Maccabee Bldg., Detroit.

MISSOURI: St. Louis, June 10-12. Sec., Dr. James Stewart, Capitol Bldg., Jefferson City.

NATIONAL BOARD OF MEDICAL EXAMINERS: Class A Medical Schools having five or more applicants, June 23-25. Ex. Sec., Mr. E. S. Elwood, 225 South Fifteenth St., Philadelphia, Pa.

NEBRASKA: Omaha, June 8-9. Act. Sec., Mr. P. H. Bartholomew, Lincoln.

NEW JERSEY: Trenton, June 16-17. Sec., Dr. James J. McGuire, 28 West State St., Trenton.

NEW YORK: Albany, Buffalo, New York, Syracuse, June 22-25. Chief, Mr. H. J. Hamilton, Room 315, State Education Bldg., Albany.

NORTH CAROLINA: Raleigh, June 15. Sec., Dr. John W. MacConnell, Davidson.

NORTH DAKOTA: Grand Forks, July 7-10. Sec., Dr. G. M. Williamson, Grand Forks.

OHIO: Columbus, June 2-5. Sec., Dr. H. M. Platter, 85 East Gay St., Columbus.

OKLAHOMA: Oklahoma City, June 11-12. Sec., Dr. J. M. Byrum, Shawnee.

OREGON: Portland, July 7-9. Sec., Dr. C. J. McCusker, 1014 Medical Dental Bldg., Portland.

PENNSYLVANIA: *Written.* Philadelphia and Pittsburgh, July 7-9. *Practical.* Philadelphia, July 10-11. Sec., Dr. Charles D. Koch, Harrisburg.

RHODE ISLAND: Providence, July 2-3. Director, Mr. Lester A. Round, Room 319, State Office Bldg., Providence.

SOUTH CAROLINA: Columbia, June 23. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

TENNESSEE: Knoxville, Memphis and Nashville, June 16-17. Sec., Dr. Alfred B. DeLoach, Medical Arts Bldg., Memphis.

TEXAS: Austin, June 23-25. Sec., Dr. T. J. Crowe, 918-919 Mercantile Bank Bldg., Dallas.

UTAH: Salt Lake City, June 30–July 1. Director, Mr. S. W. Golding, 412 State Capitol Bldg., Salt Lake City.

VERMONT: Burlington, June 17-19. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 23-26. Sec., Dr. J. W. Preston, 720 Shenandoah Life Bldg., Roanoke.

WASHINGTON: *Basic Science.* Seattle, July 9-10. *Regular.* July 13-14. Dir., Mr. Charles Maybury, Olympia.

WEST VIRGINIA: Harpers Ferry, July 7-9. Sec., Dr. W. T. Henshaw, Charleston.

WISCONSIN: *Basic Science.* Milwaukee, June 6. Sec., Prof. R. N. Bauer, 3414 W. Wisconsin Ave., Milwaukee. *Regular.* Milwaukee, June 30-July 1-2. Sec., Dr. Robert E. Flynn, 315 State Bank Bldg., LaCrosse.

WYOMING: Cheyenne, June 1. Sec., Dr. W. H. Hassed, Capitol Bldg., Cheyenne.

Washington January Examination

Mr. George L. Berger, assistant director, Washington Department of Licenses, reports the written examination held at Seattle, Jan. 12, 1931. Eleven candidates were examined, all of whom passed. Eleven candidates were licensed by reciprocity and

2 by the endorsement of credentials. The following colleges were represented:

College	Year Grad.	Number Passed
PASSED		
University of Colorado School of Medicine	(1930)†	1
University of Illinois Coll. of Med.	(1926), (1930),* (1931, 2)*†	4
Washington University School of Medicine	(1930)†	1
University of Oregon Medical School	(1930, 3)†	3
University of Virginia Department of Medicine	(1930)†	1
University of Toronto Faculty of Medicine	(1926)	1

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
College of Medical Evangelists	(1930, 2)	California
Northwestern University Medical School	(1911)	Utah
University of Minnesota Medical School	(1926)	Minnesota
Creighton University School of Medicine	(1916)	Nebraska
University of Oregon Medical School	(1923), (1929)	Oregon
Jefferson Medical College of Philadelphia	(1928)	Penna.
Dalhousie University Faculty of Medicine	(1919)	Minnesota
Queen's University Faculty of Medicine	(1919)	Georgia
German University of Prague Faculty of Medicine	(1921)	Montana

College	Year Grad.	Endorsement of
ENDORSEMENT OF CREDENTIALS		
Rush Medical College	(1929)	N. B. M. Ex.
University of Colorado School of Medicine	(1929)	N. B. M. Ex.

* These candidates received their four year certificate in June, 1930, and will receive their M.D. degree on completion of one year's internship in a hospital.

† The licenses of these candidates have been withheld pending completion of their hospital internship.

Book Notices

HYPERTENSION AND NEPHRITIS. By Arthur M. Fishberg, M.D., Adjunct Attending Physician to Mount Sinai and Montefiore Hospitals, New York City. Cloth. Price, $6.50 net. Pp. 566, with 33 illustrations. Philadelphia: Lea & Febiger, 1930.

This is one of the best presentations of the subject of hypertension and nephritis that has yet appeared. The arrangement is systematic and effective. Every phase of the subject is described as though it were a clinical entity. Therefore, wherever one chooses to start, the reader will find a complete discussion in that subject. The author is lavish in his references to other writers and presents a huge bibliography as well as numerous well chosen illustrations. At the same time he presents in excellent English his own opinion based on an extensive experience in pathologic anatomy and clinical work. There are excellent chapters on tests of renal function, albuminuria, edema, uremia, the general subject of arterial hypertension which, at this stage, he considers merely a symptom, but later on a clinical condition, hypertensive encephalopathy and hypertensive retinitis. The discussion of the subject of nephrosis and glomerular nephritides cannot be excelled. More space is devoted to hypertension, benign and malignant, and hypertension in pregnancy than to any other single subject.

Dr. Fishberg's principle "when renal function is impaired, this injury manifests itself by diminution in the maximum concentration in which each and every urinary constituent can be excreted" is termed by him the "unitary nature of impairment of renal function." Is there any more reason why one should expect a horizontal leveling of all the functions of the kidney in nephritis than one would expect this in diseases of any other organ? The difficulties in diagnosis and the variability in clinical manfestations are the results of the irregularity of visceral involvement in pathologic states. If one accepts the author's dictum as laid down it is possible to agree with him that the absence of renal involvement is the rule in essential hypertension and its presence as a factor in malignant hypertension. Where does the one end and the other begin? Albuminuria, casts and a slight impairment of renal concentration, if they do not mean severe renal involvement, must be accepted as an index of some involvement. The author states that malignant hypertension differs from essential hypertension in that arteriolar necrosis is an exaggeration of some process documented in the usual case of hypertension by arteriolosclerosis. The difference then seems to be one of degree. Since the urinary concentration test depicts changes in urinary concentration, urinary volume and excretory products brought to the kidney, he considers this test superior to the determination of the nonprotein nitrogen or creatinine in the blood or the dye tests as a means of determining renal compensation. The dye test depends too much on cardiac activity. He does not agree with Allen and Sherrill in the efficacy of sodium chloride restriction as a means of combating hypertension, nor does he favor protein restriction except when the nonprotein nitrogen of the blood is elevated.

The author follows Volhard and Fahr's classification of renal disease with some minor exceptions. He does not accept Volhard's theory of the cause of acute glomerular nephritis to be an arteriolar angiospasm but subscribes to the opinion that toxic and allergic influences are the active agents. In this he is in accord with the theory that seems to be gaining ground that the late development of nephritis in scarlet fever and diphtheria in the result of sensitization. Volhard is given credit for the starvation treatment of acute glomerular nephritis. Von Noorden described this fifteen years earlier.

The sections devoted to therapy are in accord with the modern and accepted methods. The author is not a faddist. His suggestions are carefully considered and well expressed. It is just what the practitioner wants. At the same time the anatomic descriptions, the attention to pathogenesis and the clinical descriptions are sufficient to recommend it to the specialist.

SEASONAL VARIATION IN MAN. (A THEORY.) By Edmund Hughes, M.R.C.S., L.R.C.P. Cloth. Price, 6/–. Pp. 126. London: H. K Lewis & Company, Ltd., 1931.

This short and readable essay is devoted to a presentation of the concept that mammalian physiologic processes have been developed on the expectation of annual periods of inactivity, and that in man traces of such a rhythm may still be present and detectable under appropriate conditions. The author frankly presents this as an hypothesis, for which little evidence is at present available. The major portion of the book is a philosophic discussion of the known facts that relate to this hypothesis. It is written for the biologic investigator but should be of interest to any one with scientific training and an inquiring turn of mind. Especially should it appeal to the physician who interests himself not only in the immediate cause and effect of physiologic disturbances but also in such generalizations concerning human mechanics as may add to his understanding of bodily behavior. Judgment as to the importance of the hypotheses here advanced must be deferred until it has been assayed by the experimental method. But there can be no question that the book itself, in emphasizing a somewhat new departure of physiologic thought, should in turn stimulate the mental processes of biologic workers. It cannot be denied that this theory of an inherent seasonal rhythm of physiologic processes deserves further attention.

THROUGH THE ALIMENTARY CANAL WITH GUN AND CAMERA: A FASCINATING TRIP TO THE INTERIOR. Personally conducted by George S. Chappell. With an introduction by Robert Benchley. Cloth. Price, $2. Pp. 231, with illustrations. New York: Frederick A. Stokes Company, 1930.

Nothing is so nonsensical as science made nonsensical. Mr. Chappell has written previous burlesques on books of travel. This book describes the adventures of a number of explorers who undertake a trip through the gastro-intestinal tract, where they stalk the heebee-geebees in the nerve forest of the lumbar region and rescue a hot dog that battles against the intestinal current. They capture phagocytes in their native lair. Some of the humor is based on analogy, some of it on puns, but most of it is pure nonsense and, as such, exceedingly funny to all who can appreciate nonsense.

TESTS AND MEASUREMENTS IN PHYSICAL EDUCATION. By John F. Bovard, Ph.D., Dean, School of Physical Education, University of Oregon, and Frederick W. Cozens, Ph.D., Associate Professor and Associate Director of Physical Education for Men, University of California at Los Angeles. Cloth. Price, $2.75. Pp. 364, with illustrations. Philadelphia: W. B. Saunders Company, 1930.

A scientific age demands scientific systems of measurement for various factors. One of the difficulties of making medicine wholly scientific is the difficulty of measuring accurately the functions of the human body. In this book, tests of the function of the heart and the strength, athletic ability and achievements and neuromuscular achievements of men and women are described. The authors are themselves engaged in such work and present the results of all their studies as well as results culled from various publications in the medical and educational fields. For those particularly concerned, this is obviously an exceedingly useful book.

DIE BIOLOGIE DER PERSON: EIN HANDBUCH DER ALLGEMEINEN UND SPEZIELLEN KONSTITUTIONSLEHRE. Herausgegeben von Prof. Dr. Th. Brugsch und Prof. Dr. F. H. Lewy. Lieferung 6, Band II: Die Morphologie der Person. Von Prof. Dr. Theodor Brugsch. Kümmerformen. Von Priv.-Doz. Dr. Max Berliner. Individuelle Entwicklungslehre im Säuglings- und Kindesalter. Von Geh. Med.-Rat Prof. Dr. Arthur Schlossmann und Prof. Dr. Albert Eckstein. Paper. Pp. 220, with illustrations. Berlin: Urban & Schwarzenberg, 1927.

DIE BIOLOGIE DER PERSON: EIN HANDBUCH DER ALLGEMEINEN UND SPEZIELLEN KONSTITUTIONSLEHRE. Herausgegeben von Prof. Dr. Th. Brugsch und Prof. Dr. F. H. Lewy. Lieferung 7, Band II: Entwicklungsalter und Pubertät. Von Priv.-Doz. Dr. Max Berliner. Rückbildungsalter. Von. Priv.-Doz. Dr. Max Berliner. Die künstlerische Beurteilung der menschlichen Körperform. Von Geh. San.-Rat Prof. Dr. Eugen Holländer. Die Thanatologie in ihrer Bedeutung für die Person. Von Prof. Dr. Georg W. Schorr. Paper. Pp. 221-424, with illustrations. Berlin: Urban & Schwarzenberg, 1927.

DIE BIOLOGIE DER PERSON: EIN HANDBUCH DER ALLGEMEINEN UND SPEZIELLEN KONSTITUTIONSLEHRE. Herausgegeben von Prof. Dr. Th. Brugsch und Prof. Dr. F. H. Lewy. Lieferung 13, Band II. Die Körperkonstitution des Japaners. Von Prof. Sen Nagai. Medizinische Charakterologie. Von Priv.-Doz. Dr. R. Allers. Die Probleme des biopsychischen Persönlichkeitsaufbaus. Von Prof. Dr. K. Birnbaum. Paper. Pp. 425-694, with 18 illustrations. Berlin: Urban & Schwarzenberg, 1928.

DIE BIOLOGIE DER PERSON: EIN HANDBUCH DER ALLGEMEINEN UND SPEZIELLEN KONSTITUTIONSLEHRE. Herausgegeben von Prof. Dr. Th. Brugsch und Prof. F. H. Lewy. Lieferung 17, Band II: Handschrift und Charakter. Von Elisabeth Flatow-Worms. Experimentelle Untersuchungen zur psychophysischen Typenforschung. Von Prof. Dr. F. H. Lewy, Prof. Dr. E. Jaensch, usw. Das Leib-Seele-Problem und die psychophysischen Korrelationen. Von Dr. Hans Pollnow. Paper. Pp. 695-1114. Berlin: Urban & Schwarzenberg, 1931.

The monumental system entitled "Die Biologie der Person" is gradually being extended. Numbers 6, 7, 13 and 17, most recently made available, concern morphology, endocrine dystrophies, the changes in the body that take place with age, the constitution of the Japanese, medical characterology, handwriting and character, and various mental types. The second volume is concluded by a well organized index. The development of this system is a further indication of the increasing interest in constitution in relationship to health and disease now being manifested by German scientists.

INJURIES TO JOINTS. By Sir Robert Jones, Bart., K.B.E., C.B., Ch.M., Consulting Orthopædic Surgeon, Royal Southern Hospital, Royal Infirmary, etc., London. Third edition. Cloth. Price, $2. Pp. 195, with illustrations. New York: Oxford University Press, 1930.

When the first edition of this book appeared, Dr. John L. Porter said, "This little book contains more orthopedic meat than any other book twice its size." The truth of this statement becomes more apparent with each succeeding edition. It reflects the knowledge of the world's greatest authority. It was written originally as a war manual. It contains valuable information on the prevention and treatment of ankylosis. The chapter on the knee is excellent. This book is recommended to general practitioners and to industrial, general, military and orthopedic surgeons.

REVIEW OF LEGAL EDUCATION IN THE UNITED STATES AND CANADA FOR THE YEAR 1930. By Alfred Z. Reed, Staff Member in Charge of the Study of Legal Education. Paper. Pp. 67. New York: Carnegie Foundation for the Advancement of Teaching, 1931.

The 1930 review reports that the high courts of Colorado, Connecticut, Delaware, Illinois, Minnesota, New Hampshire, New Jersey, Ohio, Oregon, Pennsylvania, Rhode Island, Vermont and Wyoming possess virtually unrestricted power to strengthen requirements for admission to the bar. In the remaining thirty-five states recourse must be had to the legislature to effect improvement in the qualifications prescribed for applicants or the machinery provided for their enforcement. In the past, judicial control has usually produced the best results, probably because legislatures move more slowly than courts. A survey indicates that states in which the judges are not hampered by legislative restrictions are most likely to have the most advanced rules for admission to the bar. The development of evening or "part time" law schools is reflected in the fact that in 1890 full time law schools constituted two thirds of the total number of schools and contained three fourths of the total number of law school students. In 1930 this type included less than one half of the schools and approximately one third of the students. Simultaneously there has been an increase in the number of years of education required to secure the law degree. In 1890 an overwhelming majority of the law schools, whether full time or part time, required only two years, or less, after the high school. Today all but three of the eighty-two full time schools require at least five academic years of college and law school work combined. Nearly one fourth of the schools require six or seven years. Since the inauguration, ten years ago, of standardization by the American Bar Association, the proportion of full time institutions in the total number of law schools has continued to decrease.

BIOGRAPHICAL SKETCHES AND LETTERS OF T. MITCHELL PRUDDEN, M.D. Cloth. Price, $2. Pp. 311, with illustrations. New Haven: Yale University Press, 1927.

To many physicians, T. Mitchell Prudden is known as the co-author with Francis Delafield of a popular and excellent textbook on pathology. Others remember him as the forceful scholarly lecturer and the critical director of the laboratory of their undergraduate days at the College of Physicians and Surgeons. A smaller number regard themselves as having been favored because they were permitted to come into closer touch with him in their laboratory training as specialists and investigators in pathology or in their practical work as public health officials. All who knew him bear witness to his superior scientific attainments, to his tireless industry, his modest self effacement, his loyalty to the best ideals of the profession. His conspicuous pioneer service in helping establish pathology as a distinct and important branch of medicine is attested in this volume by tributes from several of his colleagues. Among these may be mentioned Flexner, Hektoen, Ewing, Park, Emerson, Wadsworth, Wood, Freeman. The main interest of the biography, however, lies in its portrayal of Prudden's personality through description, incident and letters. Quiet, retiring, studious, a lover of art and literature, an intimate of children, with whom he could exchange nonsense letters, we see why he was liked and why he made and kept warm friends. His especial joy as a diversion was in the outdoors. Particularly was he attracted by the West, with its deserts, canyons and mountains. He took more than a passing interest in the cliff dwellers. He made a thorough study of this subject and through his popular and technical writings on this topic—he wrote in a most attractive literary style—he was regarded as an authority. The book is interestingly written, is not unduly eulogistic. It gives a lifelike picture of a fine type of cultured physician who played a leading part in the development of medicine in this country.

DIE REGULIERUNG DER ATMUNG GLEICHZEITIG EIN BEITRAG ZUR PHYSIOLOGIE DES VEGETATIVEN NERVENSYSTEMS. Von Dr. W. R. Hess, o. ö. Professor und Direktor des physiologischen Institutes der Universität Zürich. Paper. Price, 10.50 marks. Pp. 137, with 15 illustrations. Leipzig: Georg Thieme, 1931.

The purpose of this monograph was to establish the "organization of the regulatory mechanism of respiration." As the latter is considered a sympathetic nerve function, the elucidation of the mechanism instrumental in the regulation of respiratory function is necessarily a contribution to the physiology of the vegetative nervous system. The author attempted to accomplish this modest task in eleven chapters in which the numerous problems pertaining to the various phases of physiology of respiration are dealt with. An extensive literature covering fourteen pages is appended and quoted. Unfortunately, the interesting subject is treated in a rather dry and not altogether clear and inspiring manner.

PREVENTION OF DISEASE AND CARE OF THE SICK: HOW TO KEEP WELL AND WHAT TO DO IN CASE OF SUDDEN ILLNESS. By W. G. Stimpson, M.D., Assistant Surgeon General, United States Public Health Service. Including First Aid to the Injured. By M. H. Foster, A.M., M.D., Surgeon, United States Public Health Service. U. S. Treasury Department, Public Health Service, Miscellaneous Publication, No. 17. Fourth edition. Cloth. Price, 75 cents. Pp. 318, with 336 illustrations. Washington, D. C.: Supt. of Doc., Government Printing Office, 1930.

Through repeated editions, this handbook on health issued by the United States Public Health Service has been gradually improved. Unfortunately, it still is highly technical and, perhaps because of the necessity for low cost, it is poorly printed and illustrated. It is a good handbook and with a little more care might be made one of the best available handbooks of hygiene for the general public.

SELECTIONS FROM THE PAPERS AND SPEECHES OF JOHN CHALMERS DACOSTA, M.D., LL.D., SAMUEL D. GROSS PROFESSOR OF SURGERY AT THE JEFFERSON MEDICAL COLLEGE, PHILADELPHIA. Cloth. Price, $6.50. Pp. 440. Philadelphia: W. B. Saunders Company, 1931.

The philosophy of medicine is best reflected in the writings of great medical leaders. Dr. DaCosta was recently honored by Philadelphia physicians in recognition of a notable career. This collection of his essays reveals the breadth of his thought and the multiplicity of his interests. The sketches are biographical, historical, literary, philosophical and humorous. They are exceedingly interesting and a fine example of good medical writing. One of the essays, called "Behind the Office Door," is a great stimulus to research by the younger practitioners and a review of the books that should form part of the life of every cultured physician.

THERAPIE INNERER KRANKHEITEN. Von Geh. Med.-Rat Professor Dr. Alfred Goldscheider. Fachbücher für Ärzte, Band XIII. Herausgegeben von der Schriftleitung der *Klinischen Wochenschrift*. Second edition. Cloth. Price, 28.80 marks. Pp. 439. Berlin: Julius Springer, 1931.

This edition has been called for within two years of the publication of the first, which the author takes to be an indication that the world is ripe for a revival of true hippocratism, with less emphasis on medication and more stress on physical and psychic therapy. Maybe it also means that the world—at least a part of the Old World—is ripe for an intensive study and teaching of therapy, though this possibly is merely a matter of wishful thinking on the reviewer's part. Unfortunately, the author still displays an apparent deficiency in pharmaceutic training by what seems excessive references to the products of pharmacal manufacturers to the detriment of preparations that might be compounded by the pharmacist.

STALKERS OF PESTILENCE: THE STORY OF MAN'S IDEAS OF INFECTION. By Wade W. Oliver, M.D., Professor of Bacteriology, Long Island College Hospital. Introduction by Theobald Smith, M.D., Ph.D., Director, Department of Animal Pathology, The Rockefeller Institute. Cloth. Price, $3. Pp. 251, with 23 illustrations. New York: Paul B. Hoeber, Inc., 1930.

Almost all the essays in this book have appeared in the *American Journal of Surgery*, from which apparently the type has been collected. In the introduction, Theobald Smith emphasizes the importance of medical history as an interpreter of medical thought. The book is essentially an outline of medical history, handsomely printed, well illustrated, nicely annotated and exceedingly readable. It carries our knowledge of infection down to modern times. The book makes a welcome addition to any medical library.

MERELY THE PATIENT. By Henry Howard Harper. Cloth. Price, $1. Pp. 95. New York: Minton, Balch & Company, 1930.

Those who wonder what the patient, undergoing the regimen of a large clinic, thinks about will find the answer quite humorously presented in this book with an undercurrent of serious criticism. Dr. Samuel W. Lambert feels that the book is one that would do much to aid the development of a proper attitude between physician and patient. The book is enjoyable but in places somewhat gruesome.

CLIMATE: A TREATISE ON THE PRINCIPLES OF WEATHER AND CLIMATE. By W. G. Kendrew, M.A. Cloth. Price, $5. Pp. 329, with 117 illustrations. New York: Oxford University Press, 1930.

This book is essentially a basic volume in the field it concerns. It is written in nontechnical language and is easily understandable even by those without training in physical geography. There are sections on heat stroke, on dust and on similar aspects of the relationship of climate to health, but the book is not to be considered as being primarily of interest to the physician.

CHIRURGISCHE KRANKENGYMNASTIK. Von Dr. Karl Gebhardt, Assistent der chirurgischen Universitäts-Klinik München. Paper. Pp. 3.80 marks. Pp. 46, with 37 illustrations. Leipzig: Ambrosius Barth, 1931.

This little book illustrates a group of exercises, many of which are unusual and well selected. The illustrations are well reproduced and the book is recommended to all physical therapists.

Medicolegal

Liability for Medical Services Furnished an Infant

(Foster v. Adcock (Tenn.), 30 S. W. (2d) 239)

The defendant, aged 5 years, was injured in an automobile accident. His father employed the plaintiff, a physician, to render necessary medical services. When the physician submitted his bill, the father paid it in part. The physician thereafter sued the infant for the unpaid balance. In the trial court, judgment was rendered against the physician. He appealed to the Supreme Court of Tennessee, where the judgment against him was affirmed.

Undoubtedly, said the Supreme Court, an infant may bind himself and his estate for necessaries, and the emergency services of a physician are necessaries within the meaning of this rule. If, however, an infant lives with a parent and is in the parent's charge, custody and control, and if the care and protection of the parent are duly exercised, the infant cannot bind himself in that manner. The plaintiff contended, however, that in this case the father did not expressly contract to pay for the services rendered and was not financially able to do so. An infant's estate, he insisted, may be charged for necessaries, even though the infant is living with and is in the custody of his parent, if the parent is unable to pay for them. A parent's financial inability to pay for medical services, said the court, does not render the infant liable. The law implies a contract or promise on the part of the father to pay for necessaries furnished for a minor child. The obligation in this case, concluded the court, was that of the parent, not that of the infant. The father's acceptance of the physician's services, his subsequent recognition, by partial payment, of his obligation to pay, and the legal duty resting on him to provide such necessary services are circumstances sufficient to support a finding of a contractual obligation on the part of the father. If it is the father's duty, the infant cannot be held for it.

Compensation of Physicians: Fees of Expert Witness Taxable as Costs.—The fees and expenses of expert witnesses may be taxed as court costs under the provisions of Act 19, Laws of 1884, of Louisiana, even though the experts are summoned by one of the parties to the suit. Such fees and expenses, however, are taxable as costs only where it is manifest that the testimony of the witnesses is in reality necessary to elucidate some technical or scientific subject. Where the witness is not in reality placed on the stand to give such information but is called to testify as to the facts of the case, the fees and expenses are paid by the party who summons him.—*Levy v. McWilliams (La.), 129 So. 170.*

Privileged Communications: Waiver in Insurance Policy.—An insured person may waive in an insurance policy a statutory provision that "a physician or surgeon cannot, without the consent of his patient, be examined as to any information acquired in attending the patient which was necessary to enable him to prescribe or act for the patient." Such a waiver is binding on the beneficiary. The testimony of a physician, however, to the bare fact that the insured consulted him does not come within the statutory inhibition, since such testimony does not require the disclosing of any information "acquired in attending the patient which was necessary to enable him to prescribe or act for the patient."—*Lincoln Nat. Life Ins. Co. of Fort Wayne, Ind., v. Hammer, 41 Fed. (2d) 12.*

Malpractice: Accrual of Right of Action.—In an action against a physician for malpractice, based on an allegation that forceps were left in the plaintiff's abdomen after an appendectomy, the statute of limitations begins to run from the time of the operation and not from the time the malpractice is discovered. The fact that the physician may have known that the forceps were left in the patient's abdomen will not affect the running of the statute. Two or more causes of action may arise out of the same transaction, with different limits on the right of action, and although one may be barred,

the other may be good. An action against a physician may be brought either for malpractice or for a breach of contract. If action is brought on contract, the patient may be entitled to recover sums paid to the physician and sums paid out for nurses and medicines, and may recover other damages that flow naturally from the breach of whatever contract was made between the physician and the patient; but damages cannot be recovered for the injury resulting from unskilful treatment.—*Conklin v. Draper (N. Y.), 241 N. Y. S. 529.*

Malpractice: Evidence of Physicians For or Against a Dentist Admissible.—It is not necessary that a witness be a dentist in order to be able to express an opinion regarding proper practice with respect to packing the mouth to prevent blood or other foreign matter getting into the throat, stomach or lungs of a patient in the course of the extraction of teeth. A person practicing any form of surgery that causes extensive bleeding in the mouth or throat is as competent to testify as is a dentist.—*O'Connor v. Bonney (S. D.), 231 N. W. 521.*

Workmen's Compensation Acts: Preexisting Disease and Accidental Injury.—If in the course of his employment a workman receives an injury that totally and permanently disables him, the fact that at the time of the accident he was partly incapacitated by disease will not prevent him from recovering compensation in the full amount which, under the act, he is entitled to without reference to the existence of that disease.—*Texas Employers' Ins. Ass'n v. Parr (Texas), 30 S. W. (2d) 305.*

Society Proceedings

COMING MEETINGS

American Medical Association, Philadelphia, June 8-12. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

American Association for Thoracic Surgery, San Francisco, July 1-3. Dr. Duff S. Allen, Washington University Medical School, St. Louis, Secretary.

American Bronchoscopic Society, St. Louis, June 6. Dr. Louis H. Clerf, 128 South 10th Street, Philadelphia, Secretary.

American Dermatological Association, Toronto, Canada, June 15-17. Dr. William H. Guy, 500 Penn Avenue, Pittsburgh, Secretary.

American Heart Association, Philadelphia, June 9. Dr. Irl C. Riggin, 450 Seventh Avenue, New York, Executive Secretary.

American Laryngological Association, Atlantic City, June 15-17. Dr. George M. Coates, 1721 Pine Street, Philadelphia, Secretary.

American Laryngological, Rhinological and Otological Society, St. Louis, June 3-5. Dr. R. L. Loughran, 33 East 63d Street, New York, Sec'y.

American Ophthalmological Society, Asheville, N. C., June 1-3. Dr. Emory Hill, 501 East Franklin Street, Richmond, Va., Secretary.

American Otological Society, Briarcliff, New York, June 17-19. Dr. Thomas J. Harris, 104 East 40th Street, New York, Secretary.

American Physical Therapy Association, Philadelphia, June 8-9. Dr. C. C. Vinton, 585 West End Avenue, New York, Secretary.

American Proctologic Society, Philadelphia, June 7-9. Dr. Curtice Rosser, Medical Arts Building, Dallas, Texas, Secretary.

American Psychiatric Association, Toronto, Canada, June 1-5. Dr. Clarence O. Cheney, Hudson River State Hospital, Poughkeepsie, N. Y., Secretary.

American Society of Clinical Pathologists, Philadelphia, June 7-9. Dr. A. S. Giordano, 604 North Main Street, South Bend, Ind., Secretary.

American Surgical Association, San Francisco, June 29-July 1. Dr. Lincoln Davis, 205 Beacon Street, Boston, Secretary.

American Therapeutic Society, Atlantic City, June 5-6. Dr. Grafton Tyler Brown, 1801 I Street, N. W., Washington, D. C., Secretary.

Association for the Study of Internal Secretions, Philadelphia, June 8-9. Dr. F. M. Pottenger, Monrovia, Calif., Secretary.

Maine Medical Association, Greenville, June 25-27. Dr. Philip Webb Davis, 22 Arsenal Street, Portland, Secretary.

Massachusetts Medical Society, Boston, June 8-10. Dr. Walter L. Burrage, 182 Walnut Street, Brookline, Secretary.

Medical Women's National Association, Philadelphia, June 7-8. Dr. Nelle S. Noble, Bankers Trust Building, Des Moines, Iowa, Secretary.

Montana, Medical Association of, Bozeman, July 8-9. Dr. E. G. Balsam, 208 North Broadway, Billings, Secretary.

New Jersey, Medical Society of, Asbury Park, June 3-5. Dr. J. B. Morrison, 66 Milford Avenue, Newark, Secretary.

New York, Medical Society of the State of, Syracuse, June 1-3. Dr. Daniel S. Dougherty, 2 East 103d Street, New York, Secretary.

North Dakota State Medical Association, Aberdeen, S. D., June 2-4. Dr. Albert W. Skelsey, 18 Broadway, Fargo, Secretary.

Pacific Northwest Medical Association, Seattle, June 25-27. Dr. Frederick Epplen, Stimson Building, Seattle, Secretary.

Rhode Island Medical Society, Providence, June 4. Dr. J. W. Leech, 369 Broad Street, Providence, Secretary.

South Dakota State Medical Association, Aberdeen, June 2-4. Dr. John F. D. Cook, Langford, Secretary.

Wyoming State Medical Society, Rawlins, July 13-14. Dr. Earl Whedon, 50 North Main Street, Sheridan, Secretary.

ASSOCIATION OF AMERICAN PHYSICIANS

Forty-Sixth Annual Meeting, held at Atlantic City, N. J., May 5 and 6, 1931

The President, DR. RUFUS COLE, New York, in the Chair

Purpose of the Association

DR. RUFUS COLE, New York: In this association it was early decreed that no one should care who were its officers and who were not. It is now twenty-two years since I was welcomed as a member. I must express my appreciation of this honor. Being an associate and fellow student with you has been the greatest stimulus that I have had in my work. Dr. Delafield opened the first meeting with a brief speech and I will emulate him in brevity. Dr. Welsh presented a paper on the experimental production of glomerular nephritis. Dr. Pruden gave one on experimental endocarditis in rabbits. Weir Mitchell read a study on the knee jerk, and Sternberg presented one on *Bacillus typhosus* based on his studies in the sickroom.

At the present time about one fourth of the membership consists of men actively engaged in the practice of medicine. It is important that we welcome those who are not engaged in clinical medicine. We must, however, remember that there may be a weakness in the diversification of knowledge. Members in special fields may forget that there are those in the audience not so highly trained in that field. We are all here to learn, and we do not gain by highly detailed descriptions of isolated phenomena. We have heard complaints that our society has not taken part in hospital work and investigation. This is not the object of our association. When general subjects were discussed, it became apparent that the time might have been better spent on the more indirect method of encouragement of the scientific point of view, and in this field the association has exerted influence of great importance. Let us then continue to be kindly, tolerant and interested. Let us offer any promise of new knowledge in the spirit of humility and thankfulness. Let us avoid argumentation and the passing of resolutions, and, finally, let presentations be as brief as sagacity will permit.

VARIOUS FEATURES OF CARDIOVASCULAR DISEASE

The T Deflection of the Electrocardiogram

DRS. FRANK N. WILSON, A. GARRARD MACLEOD and PAUL S. BARKER, Ann Arbor, Mich.: The initial deflections (Q, R and S) of the ventricular complex are produced by the spread of the excitatory process over the ventricular muscle. The T deflection is produced by the return of the ventricular muscle from the active to the resting state. If the duration of the excited state were uniform in all parts of the ventricular muscle, the quantity of electricity flowing in one direction during excitation should flow back in the opposite direction during recovery. Consequently, the area of T, measured by means of a planimeter, should be equal and opposite to the area of Q-R-S; in other words, the area of Q-R-S-T should be zero. The area of Q-R-S-T is not ordinarily zero because the excited state is of greater duration in certain parts of the ventricular muscle than in others. If the area of Q-R-S-T in each of the three standard leads is substituted in Einthoven's triangle for the deflection amplitude in the corresponding lead, the mean electrical axis of Q-R-S-T may be obtained. For this vector the name "ventricular gradient" is suggested. It points from the ventricular region where the average duration of the excited state is longest toward the region where it is shortest. In the normal heart the average length of systole is greater on the basal and less in the apical surface of some region of ventricular muscle; the ventricular gradient points from the base toward the apex. The ventricular gradient has been measured in branch block and in cardiac hypertrophy; it is usually abnormal in both conditions.

The Nature of the Physical Signs of Bundle Branch Block

DRS. J. T. KING, JR., and DONALD MCEACHERN, Baltimore: An analysis of fifty consecutive cases of bundle branch block showed the following physical signs: visible reduplication of the apex thrust in forty-two (84 per cent); palpable reduplication

in forty (80 per cent); the first heart sound split into two elements in twenty-eight (56 per cent); two separate systolic murmurs in six (12 per cent), and a single first sound with a separate murmur in eight (16 per cent). On the basis of these signs a correct diagnosis was made prior to knowledge of the electrocardiogram in thirty-four of forty attempts (85 per cent); the presence of bundle branch block was suspected in two (5 per cent) but was not definitely diagnosed; the diagnosis was not made in four (10 per cent). There was a difference of opinion in four other cases. In the remaining six cases the presence of bundle branch block was shown only by the electrocardiogram. In three patients showing complete auriculoventricular block as well as bundle branch block, the diagnosis of both conditions was made in each case from clinical signs; signs of bundle block were found and this condition recognized clinically in five of seven patients showing both fibrillation and bundle block. The latter two groups of cases showed that the auricles are not concerned with the physical signs of bundle block. Presystolic gallop bears a superficial resemblance to the signs of bundle block: however, clinical evidence and apex cardiograms show the two conditions to be different, presystolic gallop being truly presystolic, and the signs of bundle block being limited to systole and causing a division of the apex systolic plateau. Normal controls failed to show systolic reduplication. A cinematograph film of the movement of a straw attached to the cardiac apex showed a double systolic thrust in each of the five consecutive cases of bundle branch block. The physical signs of bundle block are limited to systole and are of ventricular origin, presumably from asynchronous contraction of the ventricles. The diagnosis can usually be made from physical signs.

DISCUSSION

DR. F. N. WILSON, Ann Arbor, Mich.: In two or three cases of bundle branch block in which reduplication of the first sound was present, data were obtained by using the stethoscope simultaneously with the string of the galvanometer. In the first case in which the sound was presystolic, it could not have been due to asynchronous contraction of the ventricle because the first element of the reduplication was in the same position as it is in gallop rhythm or in hypertension in which the gallop was presystolic.

DR. W. S. THAYER, Baltimore: I am interested in Dr. Wilson's observations. I feel sure, however, that the split first sound which I have found present in those cases of which Dr. King has spoken is entirely different from a presystolic gallop. In the first place it has been for many years a familiar picture to me from an auscultatory standpoint, a perfectly distinct definite splitting of the first sound occurring in systole and of entirely different character from the presystolic gallop rhythm which occurs before the first sound and is often more easily visible and even palpable than audible. The former occurs in systole, the latter in presystole. The former is seen more commonly in patients with no great increase in pressure, the latter —presystolic gallop rhythm—usually in hypertension. I don't mean to say that presystolic gallop rhythm may not occur in a patient with bundle branch block. I have seen such an instance, but I should be greatly surprised if the split first sound of which Dr. King has been demonstrating the records has any relation whatever to this. The phenomenon of which he is speaking occurs in systole and not in presystole.

DR. L. M. WARFIELD, Milwaukee: I was interested in this subject as far back as 1925. I feel, as Dr. Thayer does, that there is a difference in the sound at the apex, between a protodiastolic sound and a presystolic, in bundle branch block. I have seen these cases clinically. On clinical demonstration one can't make a diagnosis every time by any means but in practical work it is an interesting phenomenon. I think it is an important addition to clinical methods.

DR. J. T. KING, JR., Baltimore: In regard to the relation of the Q-R-S delay and the apex waves we have not been able to explain it all, because on the apex cardiogram the two waves were widely separated and could not have been explained by delay. We thought it was due to a lag in the ventricular walls. In regard to Dr. Robinson's question, I would like to leave presystolic gallop rhythm to him. We have noted that, in the apex cardiogram associated with hypertension, this sound came at a different time and gave a different clinical impression than in bundle branch block.

Etiology, Treatment and Prognosis in Auricular Fibrillation

DRS. W. D. STROUD, J. A. REISINGER and L. R. LAPLACE, Philadelphia: We studied a series of 260 cases of auricular fibrillation. We studied the efficacy of quinidine sulphate combined with digitalis in this disease. Cases were studied in the wards of the Pennsylvania Hospital. We divided our cases into groups: arteriosclerotic, rheumatic, infectious, thyroid. We found that about 17 per cent of cardiovascular cases developed fibrillation. Our observations were about the same as for other cities in the same geographic situation. Forty-eight per cent of the total number were rheumatic and 38 per cent arteriosclerotic. We did not feel sure that syphilis produced auricular fibrillation, unless accompanied by another lesion. There were more males in the syphilitic group, but in other classes there were twice as many females as males. In regard to the age of primary manifestation as compared with the age of death, it was found that a large number died within a year after the onset of auricular fibrillation. In a large majority of patients, fibrillation started between 30 and 40 years and, of these, 88 per cent died before they were 53.

In regard to treatment and prognosis, in the year 1928 we believed that we obtained improvement in results with the use of quinidine sulphate, but we have since become skeptical and we now feel that only in exceptional cases is quinidine sulphate of value. We believe that in the average case the daily maintenance dose of digitalis keeps the patient as comfortable as possible.

DISCUSSION

DR. PAUL D. WHITE, Boston: In the last few years, patients with auricular fibrillation without other evidence of heart trouble have been noted. This may be ventricular disorder. The patients who were relatively young responded to treatment.

DR. S. A. LEVINE, Boston: Were there any sudden deaths in the series of quinidine cases? Did the doctor notice any emboli resulting from quinidine therapy? How many hypertension cases were there in the older group of the arteriosclerosis cases with auricular fibrillation? Two years ago, Dr. Fulton and I studied cases of mitral stenosis with hypertension. We thought that hypertension exercised a salutary effect on the mitral stenosis and that many patients lived for a longer period because of the hypertension.

DR. J. A. E. EYSTER, Madison, Wis.: I was much interested in the auricular fibrillation in young people. Some of these patients are successfully treated by quinidine. I was particularly interested in the subsequent development of arterial disease subsequent to auricular fibrillation.

DR. G. CANBY ROBINSON, New York: One patient came to the hospital with auricular fibrillation from inhalation of hydrogen sulphide gas. This lasted two days. There was no other sign of cardiovascular disturbance.

DR. W. D. STROUD, Philadelphia: We had two patients in whom the respiration was normal but they had sinus arrhythmia. They died suddenly. We were suspicious but not positive that there was auricular fibrillation. We have noted no case of emboli. As regards hypertension, we have drawn a chart similar to that of Dr. Levine. He had 800 cases. We had only 100, so it was not quite fair to draw conclusions. We have found that in our stenosis group with fibrillation our age incidence, as compared with blood pressure, fell below his group figures as they grew older. We don't know whether fibrillation kept blood pressure down or whether it was due to the smallness of the group.

Histologic Studies of the Arterioles in Various Types of Hypertension

DRS. NORMAN M. KEITH, NELSON W. BARKER and JAMES W. KERNOHAN, Rochester, Minn.: Subsequent studies of specimens obtained at biopsy from the pectoralis major muscle in more than 100 cases of hypertension has confirmed our previous work, which showed that the walls of the arterioles

are thickened and that the ratio of thickness of wall to diameter of lumen is definitely increased in many cases of so-called malignant and severe hypertension and some cases of chronic glomerulonephritis. Other slight but definite changes in the arterioles were noted in many of the cases. These consisted in increased prominence and tortuosity, and increase in the number of the medial and intimal nuclei. Less frequently we have found actual organized thrombosis, extensive intimal proliferation, complete occlusion of the lumen, and perivascular collections of cells. From such observations we conclude that, first, anatomic changes do occur in the small arteries and arterioles of skeletal muscle in hypertensive disease; secondly, these occur more often in cases of severe hypertension, but the changes are not proportional to the duration, height or fixation of the blood pressure; thirdly, when these changes in the arterioles are present and the clinical condition indicates diffuse arterial disease, the ultimate prognosis is serious.

DISCUSSION

DR. E. B. KRUMBHAAR, Philadelphia: I hope it will not be thought inappropriate of a pathologist to call attention to the shortcomings of the anatomic material. In biopsy material, changes can take place in the tissue from the time it is taken from the body. In the picture in which the lumen is shown obliterated, that change can be accounted for by contraction of the arteriole wall and therefore does not represent the picture during life of the tissue. Also the changes caused by different invasion, to difference in size of the wall of the lumen, may be the result of the particular stain employed and does not represent a condition during life.

DR. GEORGE BAEHR, New York: I think we should not use the terms benign and malignant hypertension and arteriosclerosis. It gives rise to bad methods of thinking. The so-called malignant type of the disease has usually come on gradually in the course of the so-called benign. After ten or twelve years there may be a marked acceleration of the progress of the disease. There are changes in the urine and large amounts of albumin and blood appear, indicating obliteration taking place in the organs. Physicians in life insurance work are accustomed to see this picture. I suggest that we call the latter type the accelerated stage of arteriosclerosis.

DR. NORMAN M. KEITH, Rochester, Minn.: The control material was of two kinds: one kind obtained at necropsy, and the other from female patients who had had the breast removed. In that control material we never found obliteration of the arterioles. The ratio was one to seven. There is some reason in the remarks of Dr. Krumbhaar. What the decreased ratio means, we don't know. We have discussed what it means; we have found these calibration changes, but what the meaning of this reduced ratio from the anatomic point of view is is uncertain. It does not matter what the group is called. The groups were there before the biopsy material became available. The groups mean something to the patient and something to the physician. As regards lesions in the retina and arteriosclerosis, there is no absolute correlation. In one case the ophthalmoscope showed spasm of the retinal vessels and that was a clue to the anatomic changes. This might be called a borderline case. It begins with a physiologic abnormality and ends with anatomic changes.

Experimental Studies Concerning the Action of Digitalis in the Failing Heart

DRS. ALFRED E. COHN, H. J. STEWART and J. M. STEELE, New York: Leaving aside the history of the older literature of this subject, it was surprising to learn that Eppinger, Kisch and Schwartz advanced the idea that in the early stage of heart failure the volume output from the heart increased. It was also unexpected that, as Harrison and Leonard showed, giving digitalis to normal dogs decreased the output. The experiments of Harrison and Leonard and of Cohn and Stewart were able to confirm and amplify in the sense that the effect of giving digitalis, in all respects, depends on various augmenting actions.

Is the output of the heart really increased in heart failure and does the action of digitalis really decrease the amount in failing hearts? We answer both in the negative.

Failing human hearts have, until now, been difficult to examine and failing hearts in experiments have not, with one or perhaps two exceptions which are not quite analogous, been studied. We have therefore analyzed the course of events during heart failure and in the period of recovery of hearts under the influence of digitalis in the heart-lung preparations of dogs. When, after a shorter or longer time, the hearts dilated (as was observed in oncometric tracings) and began to fail (as could be known easily by measuring the volume output frequently), giving digitalis in doses of 0.02 grams or less per kilogram of body weight often doubled the output. The actual outputs rose from about 300 cc. per minute to about 600 cc. At the same time the blood pressure in the right auricle, which rose with the onset of heart failure, fell. The size of the hearts, which had increased progressively, during the period of failure, either ceased doing so, or decreased.

In connection with the experiments formerly reported by Harrison and Leonard and by Cohn and Stewart, Dock and Tainter raised the point that the output declined because the volume of the inflow was reduced as the result of constriction, an effect of the action of digitalis on the veins, notably the hepatic veins.

Since in heart-lung preparations there are no veins (except the pulmonary) and influence on the results, dependent on venous constriction, is impossible, the volume output rises and sinks without reference to the veins. Constriction of the veins was in any case urged with respect to normal hearts, in which, when treated with digitalis, the output declines. On normal hearts under experimental conditions we have no information. Hearts in heart-lung preparations are obviously abnormal, even if their performance is constant for a number of hours. When these abnormal hearts are in this state, the suggestion of Dock and Tainter has been tested. The inflow has been reduced by partially closing a stopcock properly graduated to simulate constriction of the veins. When hearts are, relatively speaking, fresh, there are, as Starling showed, reductions in output corresponding to successive significant reductions in inflow. When hearts have failed and are revived by administering digitalis, the effect of restricting the inflow is less pronounced than in fresh hearts.

The restriction of inflow required to produce an influence on the result must be great. Dilated hearts, treated with digitalis, appear to be able to receive and to expel larger volumes of blood than normal ones, even when marked constriction of the inflow tube is instituted. Constriction of the inflow tube is, unless extreme, it seems, a minor factor in the total mechanism.

In failing hearts, in heart-lung preparations, it appears therefore to be a fact that the action of digitalis results in increase of the volume output.

No mention of the influence of changes, in the inflow arrangements of the apparatus, of temperature and pulse rate have been made. The inflow arrangements, once set, remained unchanged. The temperature fluctuated within insignificant limits only, and changes in rate, when they occurred, did not affect either the output per minute or, of course, per beat.

An unusual opportunity to observe the effect of giving digitalis in a human case of heart failure has been possible. Grollman's method of estimating the volume output was used. At each attack of heart failure there was edema, diminished amount of urine, decreased volume output, and increase in the size of the heart. Each time digitalis was given, edema disappeared, the amount of urine increased, the volume output from the heart increased, and its size decreased. The conclusion seems warranted that the effect of giving digitalis to failing hearts is to increase the volume output, all other factors in the circulation remaining the same, even if the inflow is reduced within reasonable limits. The experiments are designed to exhibit conditions analogous only to clinical situations—no more.

DISCUSSION

DR. F. N. WILSON, Ann Arbor, Mich.: I think that in discussing the mechanism of cardiac failure and the action of digitalis, one should remember that the heart and lungs and blood are a system of transportation for carbon dioxide and oxygen, and the system must be considered in its entirety. In

the early stages it is not so necessary to estimate the flow the heart is putting out, but the total amount of flow in proportion to the needs of the patient. The actual measure of the condition of the patient is that of the cardiac reserve rather than the amount of the output of the heart. The ratio of the amount the heart can pump at rest is in proportion to the amount pumped when the need arises. Digitalis may not alter the heart at rest but it often improves the cardiac reserve and in this it is of great value. It can improve the mechanical efficiency, which is the total reserve energy. It may do that by reducing the diastolic size of the heart.

Effect of the Digitalis Bodies on the Coronary Flow

DRS. N. C. GILBERT and G. K. FENN, Chicago: It has been observed clinically that in some instances anginal pain was consequent on digitalis administration and that attacks of angina pectoris might appear with digitalis administration in moderate doses, cease when digitalis was discontinued, and reappear when digitalis was resumed.

Because of clinical importance of the effect of digitalis on the coronary flow, it was determined to do further work on the intact animal. The experiments were done on dogs under various anesthetics. A Morovitz cannula was passed into the coronary sinus and the flow recorded by a piston recorder on a smoked drum, and measured.

In a control series of thirteen dogs the coronary flow was measured for a period of one and one-half to two hours without any medication. In the control series the coronary flow followed changes in blood pressure and pulse rate, and there was no decrease in flow which was not accounted for by a fall in blood pressure or pulse rate. In a series of twenty-five dogs under identical conditions, one tenth of the estimated lethal dose of a standardized market preparation of digitalis leaves was administered intravenously every ten minutes. In thirteen of these animals the coronary flow decreased, beginning with one tenth of the estimated lethal dose, in spite of increased blood pressure and pulse rate. Only cases in which the coronary flow decreased with a rising blood pressure and pulse rate were considered as giving evidence of a vasoconstrictor action, although it is possible that such a vasoconstrictor action occurred also in those with falling blood pressure and pulse rate. A second market preparation of the whole leaf gave similar results. A third preparation supposedly subjected to some special process, and the exact composition of which is unknown, showed a vasoconstrictor action in only one animal, suggesting qualitative differences. A standard ouabain preparation and a market preparation of ouabain showed a vasoconstrictor action in about half the experiments. Digitoxin showed a vasoconstrictor action in a smaller proportion of cases, about one fourth showing such an action with an increasing blood pressure and pulse rate. Experiments done from one to six days after vagectomy, and immediately after atropine sulphate, showed no evidence of a vasoconstrictor action.

It is concluded that digitalis does exert a vasoconstrictor action on the coronaries; but, since the coronary flow is a function of so many factors and since the action of digitalis is probably also conditioned on variable factors, a vasoconstrictor action cannot be predicted in any one case.

Renal Complications of Endocarditis

DR. GEORGE BAEHR, New York: Glomerulonephritis was encountered only three times in a series of 235 patients with rheumatic valvular disease, the majority of whom had died during the acute exacerbation of the disease. The rarity of glomerulonephritis (1.3 per cent) in rheumatic fever indicates that it is probably an accidental complication and is not characteristic of the disease. If the hypothesis were correct that rheumatic fever is an allergic manifestation of a streptococcus infection, as has been proposed, one would expect to find a higher incidence of glomerulonephritis in this disease.

One hundred and sixty-one cases of subacute bacterial endocarditis were followed to autopsy. In 91, *Streptococcus viridans* was present in the blood stream during life and was found in colonies in the vegetations. In 84 of these, typical embolic glomerular lesions were found in all stages of transformation from fresh necroses of isolated glomerular loops to the final complete conversion of the destroyed glomerular segment into a hyaline wedge of connective tissue. Among the 91 cases, one example of acute diffuse glomerulonephritis was encountered, and one chronic diffuse glomerulonephritis. Fifty-seven patients came under observation in the bacteria free stage of the disease (Libman). Although their blood cultures were consistently sterile and the vegetations when examined post mortem were free of bacteria and for the most part completely organized and often calcified, the clinical picture, as Libman has described it, could not be easily distinguished from that of patients observed in the active bacterial stage.

Microscopic examination of the kidneys in thirty-four of the bacteria free cases revealed the presence of typical healed embolic glomerular lesions. Fresh embolic glomerular lesions were never encountered, further evidence that the lesions are due to bacterial emboli and not to blood platelet or other thrombotic material. In contrast to the active bacterial stage, the healed embolic glomerular lesions were always few in number. The reason must be that the bacteria from patients have had only a short bacterial stage at the onset in which to throw off bacterial emboli. This is in accord with clinical observation that bacteria free cases are rarely seen in their bacterial stage, probably because it is brief and undramatic. The onset of an infection of the valves with *Streptococcus viridans* is usually almost symptomless and therefore escapes clinical attention until the patient is eventually brought in because of a complication such as embolism, mycotic aneurysm, anemia, debility or uremia.

It would seem as if people who develop an infection of the heart valves with *S. viridans* may do one of two things: Some promptly develop an immunity to the streptococcus and kill off their bacteria shortly after the onset of the disease. The other, more numerous, group, remains incapable of killing off the organism which infect their valves and run their entire clinical course with a persistent bacteremia.

The rarity of glomerulonephritis in the bacterial stage of subacute *Streptococcus viridans* endocarditis stands in striking contrast to its remarkable frequency as a complication of the bacteria free stage. Nineteen of the fifty-seven bacteria free patients (33⅓ per cent) died in uremia. In one, the diffuse glomerulonephritis was still acute; in eighteen, it was of the subacute or chronic variety. This represents a higher incidence of glomerulonephritis than is found in association with any other streptococcus disease, not excluding scarlet fever.

The infrequency with which glomerulonephritis was observed in patients with persistent bacteremia proves that the mere presence of the streptococcus in the blood stream is not the immediate cause of glomerulonephritis. Its far greater frequency in the bacteria free stage (33⅓ per cent) must therefore have some relationship to the phenomena concerned in the killing off of the bacteria. The glomerulonephritis of scarlet fever also does not develop during the disease but appears usually during the second week after recovery.

Glomerulonephritis was also found as a complication of both *B. influenzae* and gonococcus endocarditis. It is therefore associated with bacteria other than streptococci and is not due to any specific organism. It occurs, however, predominantly after streptococcus infection, and in connection with phenomena associated with recovery.

In 1923, Dr. Sachs and I described cases in which verrucous endocarditis and glomerulonephritis were associated, also marked by peculiar endothelial proliferations in the arterioles of the kidney, heart muscle, liver and other organs, without Aschoff bodies in the myocardium. In the same year Libman described four such cases before this association. The clinical picture showed long febrile course, endocarditis, negative blood culture, progressive weakness, and the facial lesions of lupus erythematosus disseminatus, with patches of erythema on the chest, elbows, knees, extensor surfaces of the arms and legs, petechiae, shallow ulcers of the palate with hemorrhagic margins, embolic or thrombotic lesions in the viscera, glomerulonephritis, and occasionally purpuric lesions. They therefore presented lesions partly resembling rheumatic fever, partly akin to subacute bacterial endocarditis, and other symptoms characteristic of neither of those conditions.

Seventeen cases of this disease were studied, including the original four of Libman, and it would seem that this disease presents signs of some toxic agent, probably of bacterial origin, which damages the endothelium of capillaries, arterioles, and even small arteries, small veins and venous capillaries, as well as the endocardium of the valves and chambers of the heart. The endothelium, particularly of arterioles and capillaries, becomes thickened and undergoes necrosis. The vessel lumen becomes occluded by disintegrating or thrombotic material. Secondary changes occur in the vessel walls and glomeruli. These changes, conspicuous in the kidney, may cause hematuria and azothemia. In none of the seventeen cases were Aschoff bodies found in the heart, even in special sites of predilection.

This disease, if found in life, can be recognized by the cutaneous and renal manifestations. Unless these occur, it would be impossible to distinguish it from rheumatic fever.

DISCUSSION

DR. W. S. THAYER, Baltimore: I would like to know to what extent macrophages were found in the tissues intra vitam.

DR. EMANUEL LIBMAN, New York: Most of the cases of subacute bacterial endocarditis in the bacteria-free (healing or healed) stage—an essentially afebrile condition—come under observation without having been observed in the active stage. The occasional bacteria-free case that is seen before the bacteria have disappeared from the vegetations presents at that time the usual picture of the active stage of the disease. The cases of so-called atypical verrucous endocarditis described by Dr. Benjamin Sacks and myself are evidently becoming of still more interest than was expected. We considered it best to employ a noncommittal designation until it was learned what etiologic factor or factors were responsible. The cases were grouped together because of the atypical involvement of the endocardium, negative blood cultures, tendency to marked cutaneous eruptions, and certain visceral implications. We did not feel that the facial lesions which were encountered were definitely those of so-called lupus erythematosus (erythematodes), especially as scarring was not observed. What interested us most was the importance of the study of this subject in connection with the condition which Osler described as the visceral lesions of the erythema group. They presented visceral crises, the skin lesions described by Osler—erythema, urticaria, purpura, and even necrosis (mucous membrane), and the tendency to nephritis. Osler himself believed that the condition described could be due to a variety of causes. For a long time I have thought that the Osler syndrome (as I believe it will be best to term the condition) was brought about by various agencies acting on the involuntary nervous system and not necessarily on the skin directly. The finding of such extensive disease in the small vessels as reported by Dr. Baehr today is an important addition to the knowledge. It must now be learned whether or not the vascular lesions are alone responsible for the occurrence of cutaneous lesions. Similar studies must be made in cases of cutaneous disease occurring as part of other general diseases. A consideration of the facts already in our possession leads to the recognition of the importance of a renewed investigation of the Osler syndrome, and of cutaneous eruptions in general, particularly erythema, purpura and urticaria.

DR. L. G. ROWNTREE, Rochester, Minn.: Interesting work has been done on this subject by Geckemann, a dermatologist. He emphasizes the general vascular manifestations of this disease, and the influence on the renal disease by removal of foci. Many workers still consider that this has some connection with tuberculous infection.

DR. RUSSELL L. CECIL, New York: From the nature of these lupus lesions one would not expect emboli to be found. Streptococci do not usually produce glomerular lesions. The highest incidence of the latter are in those cases in which no streptococci are found in the blood stream.

DR. GEORGE BAEHR, New York: In regard to Dr. Cecil's remarks, the work is not an argument for or against the streptococcus etiology of rheumatic fever; I merely put forward observations that may have some bearing on the subject. If this does not speak against its being a streptococcus disease, it is against the theory that it is an allergic form. In answer to Dr. Thayer's question as to the macrophages in the early stages, there were no such observations. Fourteen of the cases were diagnosed lupus erythematosus disseminatus. Those which came to autopsy belonging to this group showed that the skin lesions were part of a generalized vascular disease. Dr. Libman's cases, and one of the Osler cases, fell into this group. The others looked like those described as the Osler syndrome. Those cases with macroscopic hematuria looked like the clinical picture of Schoenlein-Henoch's purpura. At one stage of the disease there was a picture of Frank's capillary toxicosis. Some of the manifestations of the disease looked like Kussmaul-Wagner periarteritis nodosa. Tuberculosis was excluded by postmortem examination.

Aortic Stenosis from Calcareous Disease of the Valves

DR. HENRY A. CHRISTIAN, Boston: There is a form of cardiac lesion, not very infrequent, which has a clinical picture so characteristic that it deserves more frequent recognition than commonly happens. Its characteristics are: (1) occurrence chiefly in males relatively late in life; (2) slow progression of the lesion with symptoms of decompensation appearing late, though not necessarily prolonged after their development; (3) the presence of a systolic thrill and a harsh, loud, systolic murmur in the aortic area, with or without a diastolic murmur of aortic insufficiency; (4) often a characteristic pulse with a normal or decreased pulse pressure; (5) enlargement of the heart; (6) a history of rheumatism early in life; (7) at autopsy stenosis of the aorta with deposits of calcification in the cusps, while the other valves are not organically abnormal; great hypertrophy of the heart. Twenty-one such cases are reported with the diagnosis confirmed at autopsy. In two of these there was syphilitic aortitis; in all but two, atheroma of the aorta was moderate or slight. In nineteen of twenty-one the Wassermann reaction was negative. The smallest heart in the series weighed 505 Gm., the largest 1,045 Gm. The x-rays should show calcification in the region of the aortic valve in a considerable proportion of these patients. Diagnosis should be relatively easy, if the characteristics described are kept in mind.

DISCUSSION

DR. EMANUEL LIBMAN, New York: A calcific aortic stenosis may result from secondary calcification in a nonstenosing rheumatic lesion and also in a valve formerly the seat of a subacute bacterial endocarditis. Such cases are, however, infrequent at the age period of the group studied by Dr. Christian. Calcific stenosis may also occur and result purely or almost purely of atherosclerotic and calcific diseases. The lesions may be a calcification situated largely or almost entirely in the sinus of Valsalva, especially if the valve is bicuspid. The presence and amount of atherosclerosis and calcification in the aorta itself depends on whether or not the lesions of the valve precede the involvement of the aorta by any considerable period. If a stenosis occurs before lesions of any consequence have developed in the wall of the aorta, the latter may be found thin and smooth. In cases of uncomplicated aortic stenosis a pulsation is not felt in the jugulum, if the heart is not elevated. As I have stated on previous occasions, it is particularly in cases of calcific disease of the aortic valve that one is apt to get lesions about the mouths of the coronary arteries. If the right coronary artery is involved, evidence of a right-sided insufficiency may be encountered. In this way, a patient who has aortic stenosis may develop right-sided, before left-sided, deficiency. In connection with surgical procedures the question often arises as to which cardiac diseases are most likely to result in sudden death on the operating table. In my experience they are mainly two—coronary closure and calcific aortic obstruction or stenosis in individuals over 60 years of age. Wilks and Moxon as long ago as 1863 noted the occurrence of sudden death on the street in such individuals, without previous symptoms of cardiac insufficiency.

DR. LEWIS A. CONNER, New York: One point that is often overlooked in the study of this lesion, both in the arteriosclerotic and in the aortic types, is that all the usual signs of an aortic lesion may be lacking and yet patients come to the ward with heart failure. One cannot make a negative diagnosis before the

heart has reestablished itself. The aortic stenosis developed in the ward, right under one's eyes, where it was impossible to suspect its presence.

DR. ALEXANDER LAMBERT, New York: I should like to know whether Dr. Christian invariably noticed slow pulse connected with the aortic stenosis. As Dr. Conner says, often one gets a hint of the condition by the slowness of the pulse.

DR. T. B. FUTCHER, Philadelphia: Dr. Christian says it is important to detect the diastolic thrill. I think the ability to discover it depends on the technic. It should be tested both in the recumbent and in the sitting posture. The patient should sit up and lean forward and take a forced expiration. The thrill is noted by placing the fingers on the aorta.

DR. HENRY A. CHRISTIAN, Boston: None of the valves were bicuspid. There was some calcification of the aorta in arteriosclerosis. It occurs very late, in view of the age. The same thing happens as regards coronary disease. As to sudden deaths in the hands of physicians, they do not occur, but the patients don't live long after compensation has been effected. In regard to Dr. Lambert's question, the pulse is slow, but it is also quite a characteristic small pulse. The Wassermann test and the x-rays definitely help in excluding other forms of aortic disease. In regard to Dr. Futcher's remark as to demonstrating the thrill, I think the difficulty is not in the position of the patient but in the way one feels the patient. The emptying and filling of the lungs gives an opportunity to get closer to the aorta and one can take advantage of that aid.

Study of Course of Acute Manifestations of Rheumatic Infection, Uninfluenced by Specific Therapy

DRS. JOHN WYCKOFF, IRVING GRAEF and WILLIAM ZITRON, New York: Studies of rheumatic fever from 1864 to 1884 were controlled by cases without treatment. Of recent years no studies have been made of the natural course of the disease uninfluenced by therapy. We thought it would be useful to study the natural course, if it could be done without danger to the patient, so as to have a ground work from which to evaluate the results of therapy. One hundred and four cases were thus studied. Fifty-seven patients left the hospital before conclusive tests were made. Forty became inactive. Thirty-five males and twelve females were studied, eleven of whom were below 20 years of age. We divided the patients into arbitrary groups: (1) polyarthritis without previous cardiac manifestations, (2) chorea group and (3) chronic cardiac group. Twenty-six of the forty-seven showed cardiac manifestations; ten had pleurisy; three had pneumonitis; one had subcutaneous nodules; six had skin manifestations. The length of the disease had reference to the number of manifestations, the chorea cases showing the longest duration. As regards temperature, the shortest period was five days, the longest fifty-six days, the highest 105 F. Elevation of temperature in our group lasted no longer than when antipyretic drugs are used. Joint manifestations did not last more than twenty days at the longest. There were six deaths in the cardiac groups, and none in the other groups. Our conclusions were that the rheumatic manifestations tended to cease spontaneously. This group must be compared with other groups in the same geographic location.

DISCUSSION

DR. LEWIS A. CONNER, New York: The authors have not stated what treatment by salicylate means in this group. It means a different thing in different hands. In young children with repeated attacks of cardiac rheumatism, with little or no joint manifestation, and sudden recurrences, salicylates did little or nothing; but I cannot think that, in the young adult in whom the rheumatic symptoms are a conspicuous feature, a course of treatment of salicylates properly administered is no better than a placebo. Often in the wards, treatment by salicylates is badly done. I see frequent use of small doses given by mouth. The stomach has been upset and the patients cannot take more than 30 grains (2 Gm.) a day. I am sure, then, that the results are no better than they would be without salicylates. But I believe that with large doses for a few days at the onset of the attack the result is better. I should like to go with Dr. Wyckoff in his ward and try to demonstrate to him that salicylate is of some value. Large doses cannot be given by mouth. Two thirds of the total amount can be given by rectum and the rest by mouth, and in this way one sees most dramatic results. At the New York Hospital we try to start off with a dosage of from 150 to 200 grains (10 to 13 Gm.) a day. We have to follow this procedure in order to obtain striking results. This treatment can be maintained for only a limited period.

DR. PAUL D. WHITE, Boston: During the war, in France, Dr. Cabot and I had charge of a large number of young soldiers who had rheumatic fever. Dr. Cabot thought it advisable to test the salycilate therapy by treating half of the patients with salicylates and those in another ward with acetphenetidin. We were unable to continue this plan for more than a few days. The soldiers rebelled and demanded salicylate treatment, having heard that their comrades in the other ward were getting quick relief from the pain by the use of salicylates. Salicylates do not shorten rheumatic endocarditis but they do have an effect on the rheumatic manifestations.

DR. JOHN WYCKOFF, New York: I am afraid I did not make myself quite clear. Salicylates have undoubtedly a tremendous value in rheumatic fever. They relieve pain and do away with the polyarthritis, usually like magic. The idea of this study is to give a base line from which therapeutic effect can be judged. I tried to point out two or three features in the natural course of the disease. The duration of fever is no longer than when comparable methods are used. The patients were kept in bed and were quite comfortable. The joints were wrapped in cotton wool and the patients received codeine. Without this they would have had a good deal of pain.

The Healing of Rheumatic Heart Disease

WARREN COLEMAN, New York: Heart disease is the outstanding public health problem of today. Heart disease has been the leading cause of death in New York State for eighteen years and is on the increase. The majority of all cases of heart disease develop in children. I do not believe that much improvement in the situation may be looked for without campaigns of publicity equal in scope and persistence to the campaigns against tuberculosis and cancer. I would suggest that "Child Health Day" be utilized as the vehicle of publicity.

The tendency of rheumatic heart disease is to heal. The valves may heal with or without deformity. The duration of the inflammatory process may be shortened by treatment, especially by rest in bed. By early diagnosis and early treatment a large proportion of cases of rheumatic heart disease may be saved from disabling deformities of the valves.

The diagnosis of rheumatic heart disease is essentially a diagnosis of rheumatic infection. Because of its protean nature the recognition of rheumatism rests on the most diverse manifestations. The heart may be the first part of the body affected. From every point of view it is the most important structure attacked. It is the only one subject to permanent disabling after-effects.

I believe that every child with "potential rheumatic heart disease" already has a damaged heart. Every rheumatic child is a potential rheumatic heart casualty. Any change from the normal in the physical signs of the heart should be made the subject of the most searching examination for other evidences of rheumatism. Activity of the cardiac lesion is usually attended with fever, though the temperature may not rise more than half a degree to a degree above normal. In all cases with active lesions the patient should be put to bed and kept there until all activity ceases. This attitude should be as uncompromising as in the case of tuberculosis. Recurrences are frequent and should be treated as first attacks.

DISCUSSION

DR. HAVEN EMERSON, New York: The increase is limited to the decades after 30. In the last fifteen years there has been reduction in the five year periods in death due to rheumatic heart disease in New York City and State. It is believed that this is associated with the public policy that has been pursued, that of rest in bed, early diagnosis, and treatment of the case as if it were one of acute infection. All this has contributed to reduction in the deaths from heart disease under 26 years of age. This is most notable as compared with the increase in the decades over 30.

(To be continued)

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, Chicago

14: 287-388 (April) 1931

Heterochromia and Allied Conditions. R. I. Lloyd, Brooklyn.—p. 287.
Case of Heterochromia Iridis. V. L. Raia, Providence, R. I.—p. 299.
Ophthalmic Education. C. S. O'Brien, Iowa City.—p. 302.
Control of Trachoma. N. B. Harman, London.—p. 310.
Inoculation of Human Conjunctiva with Bacterium Granulosis. F. I. Proctor, P. Richards, M. Greenfield, W. C. Finnoff and P. Thygeson. —p. 318.
Influence on Operative Results of Ocular Muscle Action Under Sherrington's Law. R. O'Connor, San Francisco.—p. 322.
New Type of Instrument for Testing Light and Color Sense. C. E. Ferree, Baltimore.—p. 325.
Two Particles of Steel in One Eye. C. N. Spratt, Minneapolis.—p. 334.

American Journal of Surgery, New York

11: 435-638 (March) 1931

*Contribution to Modern Method of Diagnosis and Treatment of So-Called Sciatic Neuralgias. G. Labat and M. B. Greene, New York.—p. 435.
Studies in Spinal Anesthesia. M. Saklad, Providence, R. I.—p. 452.
*Deaths from Spinal Anesthesia. H. C. Falk, New York.—p. 461.
Extrapleural Throacoplasty Performed Under Spinal Anesthesia. R. B. Bettman and M. Biesenthal, Chicago.—p. 469.
Combined Novocaine-Nupercaine Spinal Anesthesia. F. T. Romberger, LaFayette, Ind.—p. 471.
Spinal Anesthesia. V. E. Johnson, Atlantic City, N. Y.—p. 478.
Pernocton Sleep: Surgical Use and Therapeutic Indications. B. Friedlaender, Detroit.—p. 485.
Therapeutic Paravertebral Alcohol Block: Observations of Effect Following Use in Angina, Asthma and Raynaud's Disease. F. G. DuBose, Selma, Ala.—p. 497.
Present-Day Criteria of Roentgen Ray Diagnosis of Duodenal Ulcer. Å. Åkerlund, Stockholm, Sweden.—p. 504.
Campiodol (Iodied Rapeseed Oil): Use in Diagnosis and Treatment of Intrathoracic Diseases. W. B. Faulkner, Jr., San Francisco, and M. A. Glaser, Los Angeles.—p. 522.
*Factors Concerned in Determining Chronicity of Ulcers in Stomach and Upper Intestine: 1. Susceptibility of Jejunum to Ulcer Formation. 2. Effect of Diet on Healing of Acute Gastric Ulcer. A. C. Ivy and G. B. Fauley, Chicago.—p. 531.
Failure of Reabsorption of Gastric and Pancreatic Juice as Pathogenic Factor in Some Gastro-Intestinal Disturbances. L. R. Dragstedt, Chicago.—p. 544.
*Lateroposterior Incision for Appendectomy. A. L. Soresi, New York. —p. 552.
*Spinawl for Spinal Anesthesia. H. F. Graham, Brooklyn.—p. 557.
Tuberculosis of Uterus and Tubes. A. M. Dickinson, Albany.—p. 558.
Removal of Metal Ring from Penis. J. E. Cannaday, Charleston, W. Va. —p. 560.

Sciatic Neuralgias.—Labat and Greene include under the so-called sciatic neuralgias not only painful conditions of the sciatic nerves (great and small) but also associated conditions of the external cutaneous and anterior crural nerves. Correct diagnosis of the nerves involved is of the highest clinical importance. The electrical percussion hammer is of valuable help both in diagnosis and in treatment. Individual blocking of these nerves is here recommended in lieu of the classic caudal or epidural block, which may be followed by impairment of the vesical and anal sphincters, as well as by weakness of both lower extremities. Individual block improves the circulation on the affected side and gives greater comfort to the patient. The use of pure alcohol is contraindicated, because of permanent damage that may ensue to motor function. Mixtures of alcohol and procaine hydrochloride in weak solutions give better results. The reaction or distortion of perception of sensations following alcohol block is occasionally severe and of rather long duration, but individual psychology is a great factor in their maintenance. Physical therapy in the form of diathermy, infra-red rays and massage seems to be accepted differently by different persons. As a general rule, diathermy does not give as satisfactory results as infra-red rays and massage. Some patients do well by being left alone after explanation of the different phases of the sensory changes they are likely to go through. Others derive a real benefit from the postblocking treatment. Many patients were becoming or had become drug addicts. Nerve blocking has been a substitute for the narcotic drugs. Painful conditions associated with productive ostearthritis can be relieved by the use of alcohol-procaine hydrochloride nerve block. It is not possible to foretell the period of relief, because this method of treatment is comparatively new and delicate in its application; but in the authors' experience it has given encouraging results and promises to be the method of the future.

Deaths from Spinal Anesthesia.—Falk believes that spinal anesthesia should not be the anesthesia of choice as a routine method of anesthesia in all cases in any large surgical service. He feels that spinal anesthesia should not be given by an intern or by any one other than a physician anesthetist whose sole object is to train himself thoroughly in the use of the various anesthetic agents. By placing spinal anesthesia in the hands of such an individual, one is assured that the proper amount of attention will be given to the minor details which go so far and do so much toward making spinal anesthesia a success. Two hundred milligrams of procaine hydrochloride should not be used as a routine in all cases. The dosage should be varied according to the patient, his temperament, his weight, the type of operation and the operator. The use of barbotage to the extent of 10 cc. is contraindicated as a routine. Spinal anesthesia is not the anesthesia of choice in operations above the diaphragm. In upper abdominal conditions spinal anesthesia gives excellent relaxation, but one must expect occasionally to obtain some effects one does not desire. In low abdominal operations lasting a long time a large dose (200 mg.) of procaine hydrochloride is indicated without barbotage and dissolved in 5 cc. of spinal fluid.

Chronicity of Ulcers in Stomach and Upper Intestine.—Ivy and Fauley discuss the following factors as determinants of chronicity of ulcer of the stomach and upper intestine: (1) infection, (2) mechanical effect of food and motility, (3) blood flow and fibroblastic reaction, (4) allergy, (5) nutrition or digestive disturbance, (6) corrosive or irritating action of gastric contents, and (7) mucosal susceptibility. Experimental evidence is cited which shows that the roughage in or consistency of the diet in the presence of a factor conducive to connective tissue proliferation is conducive to the formation of a chronic gastric ulcer in rabbits. Experiments have been devised in an attempt to evaluate the mechanical, nutritional, chemical and mucosal susceptibility factors in the etiology of intestinal ulcers following gastro-enterostomy. The evidence shows that all these factors operate and that the mechanical, chemical and mucosal susceptibility factors are the most important. On keeping the mechanical factor constant and varying the chemical factor (the change in the chemical factor leads to some change in nutrition, which could not be avoided in all animals), it is shown that the chemical factor is the most important. On keeping the nutritional factor constant and by analyzing the chemical, mechanical and mucosal susceptibility factors, it is shown that the jejunal mucosa is more sensitive to the irritating action of gastric contents than duodenal mucosa. The percentage of occurrence of ulcer following various types of gastro-enterostomies in the dog shows that the size of the orifice is important and that the jejunal mucosa is much more likely to develop ulcers than the duodenal mucosa. The experimental results on dogs show that for this animal at least a pyloroplasty or gastroduodenostomy is preferable to a gastrojejunostomy and indicate that, if a gastro-enterostomy must be done in the human being, a pyloroplasty or gastroduodenostomy is preferable to a gastrojejunostomy so far as the occurrence of postoperative ulcer is concerned.

Appendectomy Incision.—Soresi describes a lateroposterior incision for appendectomy, which permits the surgeon to reach directly the base of the appendix and the whole appendix. This incision renders appendectomy easier and safer in the presence of the most severe complications, such as retrocecal appendix, appendicular abscess, adhesions and general peritonitis. It decreases shock because no other peritoneal organ except the

cecum is disturbed or traumatized; it does not require packing; it requires little retraction; it is speedier than through any other incision. It allows perfect drainage. It does not cause postoperative complications, such as adhesions, ventral hernia or chronic fecal fistulas. It can be done easily under local, spinal or gas anesthesia even when the patient is restless or not completely relaxed, because loops of intestine cannot protrude through the incision. Pus situated in a localized abscess can be evacuated without infecting the general peritoneal cavity. When general peritonitis is present it allows ideal conditions for shockless, traumaless operation and perfect drainage. The author describes and advocates a technic for subserous removal of the appendix which renders appendectomy safer, easier and speedier even when dense adhesions are present. Patients are more comfortable after an appendectomy performed through the lateroposterior incision than through any other incision. This incision is ideal only for appendectomy: it is not meant for exploratory laparotomies.

Spinawl for Spinal Anesthesia.—To facilitate the use of a needle of small caliber for lumbar puncture, Graham makes a preliminary opening in the skin with an awl. The instrument has a triangular point with sharp cutting edges like a skin needle. It is easily inserted and leaves a tiny opening through the skin. The top is slightly cupped and measures 2.2 by 2.2 cm. (⅞ by ⅞ inches). The pin is 3.2 cm. (1¼ inches) long and tapers from top to bottom. The shape of the instrument makes it easy to control and direct. It is used as follows: The skin is anesthetized with procaine hydrochloride and ephedrine solution, a small hypodermic needle being used; the spinawl is then used to make a small puncture. Then, without the removal of the fingers of the left hand, the hollow spinal needle introducer is inserted and its stilet withdrawn. Through this a small caliber spinal needle, with short bevel, is passed into the spinal canal. The whole process takes less than a minute and, in the author's experience, greatly shortens and facilitates the induction of the average spinal anesthesia.

American Review of Tuberculosis, Baltimore

23: 215-332 (March) 1931

*Calmette-Guérin Strain of Tubercle Bacillus (B C G): Effect in Vitro of Environment on Virulence of B C G. K. T. Sasano and E. M. Medlar, New York.—p. 215.

*Benign Acute Pulmonary Tuberculosis. G. G. Ornstein, D. Ulmar and E. L. Dittler, New York.—p. 223.

Clinical Classification of Pulmonary Tuberculosis. G. G. Ornstein, D. Ulmar and E. L. Dittler, New York.—p. 248.

Clinical Application of Artificial Heliotherapy. H. S. Willis and J. Cohen, Baltimore.—p. 286.

Fatigue Conscience in Tuberculosis. M. J. Breuer, Lincoln, Neb.—p. 297.

Survey of Private Practice in Tuberculosis in Large City. J. B. Hawes 2d, Boston.—p. 306.

Pulmonary Effects of Intratracheal Injections of Old Tuberculin in Rabbits: Roentgenographic Changes Following Hemoptysis, C. R. Austrian and H. S. Willis, Baltimore.—p. 310.

Lymphocytic: Monocytic Ratio in Experimental Tuberculosis in Guinea-Pigs. E. R. Bosworth, Wallingford, Conn.—p. 318.

Plasma Protein, Red Cell Sedimentation and Serum Lability of Blood in Tuberculosis. L. R. Jones, St. Louis.—p. 325.

Virulence of B C G.—According to Sasano and Medlar, the advisability of administering living micro-organisms that have pathogenic potentialities to human beings as a vaccine is open to question. If living micro-organisms are to be used as a vaccine, one must be fully aware of the conditions under which the bacteria should not be grown, as well as those under which the pathogenic properties are suppressed to a point at which they are relatively harmless. Data are presented with the purpose of emphasizing the potential pathogenic proclivities of B C G. The authors accept Calmette's statement that the pathogenicity of B C G has been greatly curbed by growing it for a long period of years on bile-glycerin-potato medium. They do believe, however, that Calmette's statement that B C G is a virus fixé may lead many workers to believe that it makes little difference under what conditions the organism is grown. It is evident from their experiments that cultural environment has a profound effect on the virulence of B C G. Their experiments convince them that it is possible to enhance greatly the virulence of B C G if the culture is grown in a suitable environment. They do not feel that they have determined the only environment in which B C G may become virulent. To obtain good growth of the original B C G culture in the new environment was difficult. In spite of the vast amount of research work that has been done, little is yet known relative to the conditions essential to the establishment and maintenance of the virulence of pathogenic micro-organisms. This is especially true of the tubercle bacillus. Environment undoubtedly is the deciding issue. Proper temperature and accurate adjustment of the p_H of the medium are essential. Normal unheated rabbit serum apparently contains a substance or substances highly favorable for the rapid development of virulence. B C G, when grown under the environment which the authors succeeded in establishing, has evidenced a virulence greater than any other culture of tubercle bacillus they have had in their laboratory. For over six months since the return of virulence they have kept the culture on Petroff's egg medium. The virulence is still present, but it is not as potent as when first cultured. Another fact of great importance is that their altered culture of B C G became equally pathogenic for rabbits, guinea-pigs and cattle. Their work substantiates the observations of Petroff on the "dissociation" of B C G. They have not used the same method but their end-results are similar. There is no question that the gross appearance of virulent and of nonvirulent cultures is different. The virulent culture is smooth, veil-like and colorless, and is easily emulsified. The culture of low virulence is rough, compact and often chromogenic, and is emulsified with difficulty. In their work they have purposely taken the original culture without any attempt to isolate different types of colony. There can be no question of contamination in their method, nor do they hesitate to discard completely the charge of contamination in Petroff's investigations. They have succeeded in altering the original B C G culture in its gross appearance and in its virulence without resorting to isolation of single colonies. While Calmette's observations point, so far, to the innocuousness of the vaccine, one must not lose sight of the fact that all control over the tubercle bacillus and its activities is relinquished once it gains access to the tissues. The investigations tend to prove that B C G is not a virus fixé, and that its stability depends entirely on its environment.

Benign Acute Pulmonary Tuberculosis.—Ornstein and his associates describe an acute form of tuberculosis. Its onset is sudden, its course brief and its resolution complete. The symptoms are slight—slight cough and expectoration for a few days and then their disappearance. Blood-spitting is apt to be the initial symptom; it so occurred in 43 per cent of their cases. After the first week the patient usually feels perfectly well. The physical signs are scant, dulness and diminished breathing being the most usual changes. Roentgen examination shows a dense shadow of varying extent, usually classified as far advanced. Sixty-two per cent of a series of fifty-eight cases fell into this group. Only 20 per cent were moderately advanced, while 18 per cent had a minimal lesion. The shadow may resolve in from a few weeks to a few months, leaving a clear lung field, or in its disappearance it may be absorbed uniformly or else irregularly, producing an appearance suggestive of cavitation. The benign form of tuberculosis described has been frequently confused with the acute malignant form which goes on rapidly to caseation. A scheme of differential diagnosis is presented. The treatment is rest in bed till all roentgen evidence of the lesion has disappeared. In 22 per cent of the cases there was a definite history of exposure to tuberculosis. The patient must be protected from further contact with tubercle bacilli.

Annals of Internal Medicine, Ann Arbor, Mich.

4: 881-1104 (Feb.) 1931

*Glycosuria of Hyperthyroidism and Its Clinical Significance. I. M. Rabinowitch, Montreal.—p. 881.

Extra-Insular (Central) Glycosuria with Hyperglycemia Following Epidemic Encephalitis. I. W. Held, A. A. Goldbloom and J. Chasnoff, New York.—p. 897.

Obesity: Treatment by Dietary Measures. D. N. Kremer, Philadelphia.—p. 909.

*Chlorotic Anemia with Achlorhydria, Splenomegaly, and Small Corpuscular Diameters. W. S. McCann and J. Dye, Rochester, N. Y.—p. 918.

*Blood Platelets in Pernicious Anemia After Liver Therapy. S. Nittis, Ann Arbor.—p. 931.

*Clinical Consideration of an Anemia of Pregnancy and Puerperium. C. T. Smith and W. B. Kinlaw, Rocky Mount, N. C.—p. 939.

Variations in Pulse and Blood Pressure with Interrupted Change of Posture. D. G. Ghrist, Rochester, Minn.—p. 945.

Venous Pressure in Pneumonia. G. J. Kastlin and W. W. G. Maclachlan, Pittsburgh.—p. 959.
*Acute Coronary Occlusion: Clinical and Electrocardiographic Study of Twenty Cases. L. H. Sigler, Brooklyn.—p. 969.
New Esophageal and Cardiospasm Dilator. M. Einhorn, New York.—p. 990.
Pertaining to Peptic Ulcer. A. Bassler, New York.—p. 997.
Lambliasis Simulating Duodenal Ulcer. E. Boros, New York.—p. 1004.
Congenital Obstruction of Urinary Tract. N. T. Saxl, New York.—p. 1006.
Psychiatric Consultation Service Supplied by State Department of Health. J. L. McCartney, Hartford, Conn.—p. 1014.
Experimental Studies of Nerve Impulses: Attempted Correlation Between Physiology and Symptomatology. H. Byrd and W. Byrd, Detroit.—p. 1020.
Comparison of Diagnostic Value of Wassermann, Kahn and Microprecipitation Tests for Syphilis. N. Enzer, G. V. Hallman, E. A. Conway and L. Hyslop, Milwaukee.—p. 1028.
Probable Case of Pituitary Disease Among Men of Old Stone Age. H. Gauss, Denver.—p. 1036.

Glycosuria of Hyperthyroidism.—Rabinowitch is of the opinion that the glycosuria of hyperthyroidism is not of diabetic origin. Clinical experience alone, however, would appear to suffice, in order to draw this conclusion, as the glycosuria of such persons disappears after successful management of the hyperthyroidism. This belief is stressed in view of the fact that not only are such patients allowed unrestricted diets but large quantities of carbohydrates are actually encouraged. This would obviously not be the course of a potential or active diabetic person when exposed to such treatment. However, glycosuria when encountered in persons with hyperthyroidism should always be given serious consideration, as among such persons there may be true diabetes. Simultaneously determined respiratory metabolism and blood sugar time curves and the application of Allen's Paradoxical Law help in the differential diagnosis.

Chlorotic Anemia.—Five cases of chlorotic anemia, with achlorhydria, palpable spleen, anemia with low color index and corpuscles of small mean diameters, are described by McCann and Dye. Treatment with liver and liver extracts produced little or unsatisfactory curative effects. Treatment with large doses of inorganic iron in the form of pills or mass of ferrous carbonate was strikingly and promptly effective. Price-Jones curves of the frequency of distribution of diameters of erythrocytes reveal abnormally small mean diameters, and these increase to normal as the color index rises in response to treatment. The preparations of iron used contained copper as an impurity.

Blood Platelets in Pernicious Anemia.—Nittis states that in pernicious anemia the blood platelets are decreased in number but not as uniformly as are the erythrocytes. Following remission induced by liver therapy the platelets increase in number, reaching a level higher than normal, after which they decrease. The highest count usually occurs several days after the maximum reticulocyte percentage is reached. There is no gross correlation between the increase in numbers of the platelets and that of the erythrocytes, the reticulocyte percentage or the number of leukocytes. Giant forms of blood platelets appear and disappear at intervals in all cases, but this phenomenon does not form a markedly regular rhythm.

Anemia of Pregnancy and Puerperium.—Smith and Kinlaw believe that there is an anemia of pregnancy and the puerperium that is a definite clinical entity. In some instances it closely resembles pernicious anemia but not true addisonian anemia. The indications for treatment are definite and the response is highly satisfactory.

Acute Coronary Occlusion.—Twenty cases of acute coronary occlusion are reported, and the clinical manifestations as well as the electrocardiographic observations are discussed by Sigler. The clinical and electrocardiographic phenomena are dependent on the acuteness of onset and the character of the injury. The former gives rise to the anginous syndrome and shock, with its concomitant manifestations. The latter is responsible for the objective phenomena, such as fever, leukocytosis, pericardial friction rub, embolic phenomena and electrocardiographic changes. Noteworthy features of the electrocardiogram are the frequent changes in the configuration and level of the R-T and S-T segments, and the configuration of the T wave. Less frequent but equally important are variations in the height, conduction time and configuration of the Q-R-S complex, and changes in auriculoventricular and interventricular conduction and in the direction of the electrical axis at various times in the course of the disease. Emphasis is to be laid on changes in the components of the electrocardiogram, rather than on any single observation, no matter how significant.

Annals of Otol., Rhinol. and Laryngology, St. Louis

39: 927-1173 (Dec.) 1930

Correlations Between Acuity for Hearing Air and Bone Transmitted Sounds in Rinne Negative and Rinne Positive Cases. A. G. Pohlman, St. Louis.—p. 927.
Proved Case of Brain Abscess Complicating Middle Ear Suppuration: Methods of Diagnosis. L. Fisher, Philadelphia.—p. 961.
Chronic Infections of Nasal Accessory Sinuses. L. M. Hurd, New York.—p. 966.
Hereditary Deafness Due to Bilateral Acoustic Tumors. W. J. Gardner, Cleveland, and C. H. Frazier, Philadelphia.—p. 974.
Primary Aseptic Cavernous Sinus Thrombosis. G. C. Kreutz, Detroit.—p. 987.
Suppuration of Petrous Pyramid: Pathology, Symptomatology and Surgical Treatment. S. J. Kopetzky and R. Almour, New York.—p. 996.
Bacteriologic Differentiation and Specific Etiology of Mastoiditis. L. G. Hadjopoulos and S. J. Kopetzky, New York.—p. 1017.
Besredka Theory of Immunity and Its Possible Application in Otolaryngology. F. J. Novak, Jr., Chicago.—p. 1033.
Chronic Diphtheria Originating in and Limited to Trachea and Bronchi. A. E. Bulson and E. L. Bulson, Fort Wayne, Ind.—p. 1039.
Thrombophlebitis Following a Case of Chronic Otitis Media. L. J. Birsner and Dorothy Wolff, St. Louis.—p. 1045.
Relief of Right-Sided Headache by Resection of Left Sphenoid (Anatomic Variation of Sphenoid Sinuses): Case. J. B. Costen, St. Louis.—p. 1074.
Extraction of Bullet from Sphenoid Bone. S. Salinger, Chicago.—p. 1083.
Accessory Nasal Sinuses: Comparative Morphology of Nasal Cavities of Reptiles and Birds. P. R. Nemours, St. Louis.—p. 1086.
New Light Attachment for Syringe to Be Used for Injection of Iodized Oil and Medicaments into Lung by Aspiration Method. H. C. Ballon, St. Louis.—p. 1109.
Lung Immobilization in Treatment of Pulmonary Tuberculosis and Its Influence on Larynx. J. P. Dworetzky, Liberty, N. Y.—p. 1111.
Use of Insulin in Postoperative Mastoiditis with Prolonged Drainage. M. S. Ersner and J. J. Pressman, Philadelphia.—p. 1125.
Maxillary Antrums as Foci of Infection. C. B. Williams, Mineral Wells, Texas.—p. 1129.
Thrombophlebitis of Internal Jugular Vein as Complication of Tonsillitis. O. J. Dixon and F. C. Helwig, Kansas City.—p. 1137.
Bacillus Proteus Vulgaris Infection in Secondary Mastoiditis, Following Tonsillectomy, and in Radium Implantation in Tonsils. S. Stein, New York.—p. 1155.
Foreign Body in Peritonsillar Region. A. F. Laszlo, New York.—p. 1161.

Archives of Dermatology and Syphilology, Chicago

23: 409-600 (March) 1931

The Remarkable Medicine Guaiacum and Cure of Gallic Disease. U. von Hutten; Translated by C. W. Mendell, New Haven, Conn.—p. 409.
*Erythrose Peribuccale Pigmentaire de Brocq. O. S. Ormsby and M. H. Ebert, Chicago.—p. 429.
*Virulence of Spirochaeta Pallida in Culture. J. A. Gammel and E. E. Ecker, Cleveland.—p. 439.
*Keratolysis Exfoliativa and Mosaic Fungus. G. M. MacKee and G. M. Lewis, New York.—p. 445.
*Apparent Specific Effects of Sodium Iodide in Herpes Zoster. E. W. Ruggles, Rochester, N. Y.—p. 472.
Poisoning from Thallium Acetate: Case. M. W. Rubenstein, Pittsburgh.—p. 477.
American Leishmaniasis: Cases Observed in Brazil. H. Fox, New York.—p. 480.
*Dissecting Cellulitis of Scalp. R. E. Barney, Cleveland.—p. 503.
*Contact or Patch Test in Dermatology: Uses, Advantages and Limitations. M. B. Sulzberger and F. Wise, New York.—p. 519.

Erythrose Peribuccale Pigmentaire de Brocq.—Ormsby and Ebert analyze three cases of a type of pigmentation first described by Brocq as erythrose peribuccale pigmentaire. The disorder consists of a diffuse brownish or brownish-red pigmentation, most marked about the mouth and extending over the chin and along the nasolabial folds as far as the forehead. It is bilaterally symmetrical and definitely outlined at the lateral margins. The intensity of the discoloration varies greatly from day to day and even from hour to hour, but the outline of the area involved alters remarkably little over periods of months and years. The condition is due to a combination of two elements: a vasomotor and an inflammatory element. There is probably no actual increase in the deposit of melanin. The disorder is extraordinarily resistant to treatment.

Virulence of Spirochaeta Pallida in Culture.—Gammel and Ecker state that, seventy-two hours following the removal of syphilitic tissues from the host, spirochetes which may be morphologically typical and motile failed to infect rabbits when inoculated intratesticularly. Similarly, in certain mediums

(gelatinized human, sheep and rabbit serums) typical and motile spirochetes were observed for a period of weeks and months, but they failed to grow in subcultures. These cultures also, even if they retained their morphologic characteristics and motility, did not retain their virulence for rabbits for more than forty-eight hours. There is no parallelism between motility and virulence. At present no reliable culture medium is known in which virulent spirochetes can be successfully grown.

Keratolysis Exfoliativa and Mosaic Fungus.—According to MacKee and Lewis, keratolysis exfoliativa is a clinical entity limited mostly to the palms and soles. The elementary lesion is the so-called empty vesicle, which is an exceedingly superficial exfoliation without visible evidence of inflammation and with no subjective symptoms. It is rarely possible to find the long typical pathogen in these scales. In the authors' experience, the mosaic fungus is always present. In a typical, fairly severe case of the disorder, mosaic fungi were found only in potassium hydroxide preparations of scales from the hands and macerated tissue from the interdigits of the feet. Growths in culture mediums from the two sources were identical. The fungus was considered atypical *Microsporon lanosum*. In a similar case a pathogen was grown from scales from between the toes. While by no means conclusive evidence that the mosaic fungus is susceptible at times of being cultivated, since spores of the pathogen may have escaped notice, these observations are at least suggestive. Attempts to cultivate the mosaic fungus usually fail. In a study of material from various sources and in different diseases of the skin, it was found that the mosaic fungus is frequently present in conditions that are clinically known as dermatomycosis or dermatophytid, while in other diseases it is absent. The organism is frequently found in the roofs of artificial vesicles of the palms in patients who have or who have had dermatomycosis. Occasionally it is encountered in patients who have no detectable fungus focus. In one instance sporulated hyphae were found in an artificial blister. The presence of the mosaic fungus in artificial blisters may indicate that the fungus is capable of being present in normal skin with no visible clinical disease. Another interesting possibility is that fungus elements circulating through the blood stream may lodge in tissues that have been partially destroyed or damaged. The mosaic fungus is probably degenerative and represents the result of an immune process set up by the host which is only partially successful. Keratolysis exfoliativa is probably a dermatophytid caused by the mosaic fungus which has been transplanted from a focus of pathogenic fungi.

Effects of Sodium Iodide in Herpes Zoster.—Ruggles presents fifteen case histories which appear to justify the opinion that sodium iodide, administered intravenously, exercises a specific action in herpes zoster. There were four orbital cases, involving the ophthalmic nerve. Two of the patients had slight malaise following the first injection. In one case it is uncertain whether the fever should be attributed to the treatment or to the infection. The author's routine treatment has been to administer a 20 cc. ampule, containing 2 Gm. of sodium iodide, on the first, second, fourth and seventh days. Two patients received only two injections; four only three. All of the cases cleared up in from ten to seventeen days.

Dissecting Cellulitis of Scalp.—From a review of the literature, Barney concludes that dissecting cellulitis of the scalp is in close relation to acne conglobata. Microscopic investigations in a case reported by him show that the disease begins as a folliculitis followed by a severe perifolliculitis with extension of the process in the deep layers of the scalp as a purulent cellulitis. Healing results in a deep-seated fibrosis corresponding to the extent of the cellulitis. In all probability the disease represents a curious susceptibility to the pyogenic cocci. It is suggested that the name perifolliculitis capitis abscedens et suffodiens be dropped, and that the disease be designated "dissecting cellulitis of the scalp."

Contact or Patch Test in Dermatology.—Sulzberger and Wise emphasize that in carrying out patch tests it is extremely important to know that a reaction has not been caused by a substance that is a primary irritant but is actually due to the hypersensitiveness of the patient's skin. In order to be sure of this, all new substances must be tested in different dilutions on large series of normal persons in order to ascertain the concentrations which are not primary irritants; that is, not harmful to normal skins. Only these normally harmless concentrations may be used in tests for skin hypersensitiveness. In this manner serious mistakes can be avoided. This is illustrated in testing with soaps by means of the patch test. Almost any soap, if applied under the patch test for twenty-four hours, will cause an erythematous reaction on the skin of normal persons. Therefore such a reaction does not prove that a person being tested is hypersensitive to a particular soap. For testing, an emulsion of the soap must be made which is sufficiently dilute not to injure normal skins. So far it has proved of practical value only in acute cases of eczematous dermatitis—those which one is prone to call dermatitis venenata. The cases of chronic lichenified eczema, of circumscript or disseminated neurodermatitis, of seborrheic dermatitis, of urticarial eruption, of angioneurotic edema and of drug eruptions not of eczematous character have thus far proved themselves generally refractory to this type of testing. The patch test has its principal use in acute occupational dermatitis, in dermatitis venenata, in plant dermatitis, in dermatitis medicamentosa and in drug eruptions of eczematous type.

Archives of Pathology, Chicago

11: 335-517 (March) 1931

*Blood Proteins: Changes Occurring in Renal Diseases. A. E. Kumpf, Minneapolis.—p. 335.
*Studies of Calcium and Phosphorus Metabolism: Deposition of Calcium in Bone in Healing Scorbutus. W. T. Salter and J. C. Aub, Boston.—p. 380.
Paradoxical Embolism. L. R. French, Baltimore.—p. 383.
*Primary Neoplasms of Pleura: Five Cases. P. Klemperer and C. B. Rabin, New York.—p. 385.
Avitaminosis: Pathologic Changes in Nursing and in Weaned Albino Rats Suffering from Vitamin B Deficiency. B. Sure, Fayetteville, Ark.; H. S. Thatcher, Little Rock, Ark., and D. J. Walker, Fayetteville, Ark.—p. 413.
Id.: Pathologic Changes in Albino Rat Suffering from Vitamin G Deficiency. H. S. Thatcher, Little Rock, Ark.; B. Sure and D. J. Walker, Fayetteville, Ark.—p. 425.
Benzene (Benzol) Poisoning. A. Hamilton, Boston.—p. 434.

Blood Proteins in Renal Diseases.—In all forms of renal disease considered by Kumpf except hypertensive kidney, in which normal serum protein values were found to be the rule, the total protein and albumin were lowered, the globulin was increased, and the albumin: globulin ratio was lowered and frequently reversed. There were no protein changes pathognomonic for any one type of renal disease. Lobar pneumonia gave a picture much like that found in renal disease, in that there was a marked reduction in albumin and total protein, a distinct increase in globulin and persistent reversal of the albumin: globulin ratio. This was true only during the crisis. Other acute infections showed the same but less marked changes. In cardiac decompensation with edema there was a moderate reduction in albumin and total protein, with a moderate increase in globulin and a lowered, and at times reversed, albumin: globulin ratio.

Calcium and Phosphorus Metabolism.—In experiments on guinea-pigs, Salter and Aub found that calcium fails to be deposited in bone when the diet, though adequate in calcium, is deficient in vitamin C. The subsequent addition of vitamin C to such a diet allows calcium to be rapidly deposited. This deposit is largely at the epiphyseal ends of the bone and in the trabeculae. Therefore, not only growth but also the stores of the reserve supply of calcium are involved by the pathologic changes in the bone cells.

Neoplasms of Pleura.—Klemperer and Rabin state that primary neoplasms of the pleura are divided into localized and diffuse forms. They review the literature on giant tumors of the visceral pleura and report four new cases. These tumors are of mesenchymal structure and originate from the subpleural areolar tissue. Although, histologically, they usually present evidences of a low grade of malignancy, they progress slowly and usually cause death by interference with the pulmonary circulation. They offer an opportunity for surgical removal. Diffuse neoplasms of the pleura arise from the surface lining cells, the mesothelium, and should be designated mesothelioma. They may present the characteristics of epithelium, of connective tissue or of both. A case of the last type is reported. The

complex structure of the tumor is explained by the varied potentialities of the mesothelial cells as shown by their histogenesis and by experiment.

Arkansas Medical Society Journal, Little Rock

27: 193-215 (March) 1931

Acute Coronary Occlusion: Clinical Considerations. A. G. Sullivan, Hot Springs National Park.—p. 193.
Fever Associated with Syphilis. O. C. Melson, Little Rock.—p. 200.

Canadian Medical Association Journal, Montreal

24: 347-492 (March) 1931

*Pathology of Thyroid Gland of Human Fetus and the New-Born Infant. A. C. Abbott, Winnipeg, Man., and R. P. Ball, Harlan, Ky.—p. 347.
*Essential Hematuria in Relation to Pyelitis of Calix-Papilla Angle. J. Miller and D. H. Young, Kingston, Ont.—p. 354.
Sympathectomy for Megalocolon. D. E. Robertson, Toronto.—p. 359.
*Cases of Intestinal Intoxication in Children Attributed to Bacterium Dysenteriae Sonne. M. M. Johnston and A. Brown, Toronto.—p. 364.
Treatment of Peptic Ulcer. I. W. Held and A. A. Goldbloom, New York.—p. 372.
Effects of Amytal and "Avertin" on Blood, Temperature and Functions of Liver and Kidneys. W. Bourne, M. Bruger and N. B. Dreyer, Montreal.—p. 384.
Minor Maladies. C. Hunter, Winnipeg, Manit.—p. 386.
Pulmonary Complications in Pregnancy. F. H. Pratten, London, Ont. —p. 391.
Risk to Thyroid Patient. J. K. McGregor, Hamilton, Ont.—p. 397.
Management and Treatment of Incipient Cataract. L. V. Cargill, London, England.—p. 400.
Problems in Child Development. A. B. Chandler, Montreal.—p. 404.
Symptoms as Earliest Evidence of Disease. G. S. Young, Toronto.— —p. 407.
Administration of Bromides and Iodides. V. E. Henderson and G. H. W. Lucas, Toronto.—p. 412.
Ossification in a Laparotomy Wound. P. G. Silver, Montreal.—p. 414.
Subacute Combined Degeneration of Spinal Cord; Arsenical Pigmentation. W. T. Connell, Kingston, Ont.—p. 417.

Thyroid Gland.—In the gross and microscopic examination of 100 human thyroids of the new-born infant, Abbott and Ball found that 41 per cent showed anatomic evidence of disease. The pathologic histology was based on the alterations found in the adult human thyroid because of the close similarity in their anatomy. The 41 per cent incidence of pathologic lesions in the fetal and new-born thyroid is based on the study of material that came from supposedly pathologic organisms.

Hematuria in Relation to Pyelitis.—Miller and Young cite two cases of so-called essential hematuria in both of which definite, although not grossly marked, pathologic changes were found. In both instances pyelitis was present, especially localized in the calix-papilla angle. In the first case inflammatory changes of a subacute nature were found in the kidney itself, more marked and more acute toward the pelvic surface, suggesting an invasion from the hilus of the organ. The close approximation of large venous channels to this part of the pelvis (calix-papilla angle) and the presence of hemorrhage and inflammatory infiltration in the perivascular tissue of these veins supports the view of Fuchs that the bleeding in cases of this kind has its origin from veins in the sinus of the kidney. The authors suggest that if a careful investigation is made of kidneys removed for severe hemorrhage more of them will be found to show changes of the kind described. They further suggest that some of the so-called cases of localized nephritis and the cases of angioma of the papilla may come into this category. As regards the name essential hematuria, it will of course eventually be dropped as causes are found for the bleeding. It would be going too far at present to say that pyelitis of the calix-papilla angle should be substituted for it, but the latter term is certainly applicable to a number of cases of the kind. Meantime, with the situation obscure, the kidney pelvis should be examined carefully in all organs removed for serious bleedings not explained by tumor or other grossly evident pathologic change.

Intestinal Intoxication.—Twenty strains of *Bacterium dysenteriae* Sonne have been isolated from 177 patients by Johnston and Brown in a hospital for sick children. Eighteen of the strains were obtained in the investigation of 175 cases admitted with a clinical diagnosis of either intestinal intoxication or infectious diarrhea; two were from cases of pyelitis. Examinations of feces yielded seventeen strains (one strain was isolated from the feces and colon); urine, one; gallbladder at necropsy, one; colon at necropsy, one. Eight strains were obtained from cases that terminated fatally. No strains were found in the examination of the feces or necropsy material from 108 control patients. Evidence that *B. dysenteriae* Sonne had etiologic relationship with the condition of the patients has been substantiated by the demonstration of the presence of antibodies in the serum of seven patients from whom strains of *B. dysenteriae* Sonne were isolated. The serum of twenty-nine additional patients from whom no strains were isolated agglutinated *B. dysenteriae* Sonne in dilutions from 1:40 to 1:1,280. These children were under 2 years of age; eighteen were severe cases, of which seventeen ended fatally. Agglutinins were demonstrated in a total of thirty-six serums, twenty-six being from severe fatal cases. *B. dysenteriae* Sonne infected children over 2 years of age as well as infants under that age limit. Severe cases were encountered among the infants. No deaths occurred in the five older children. The onset was usually sudden in a previously healthy child; in some cases it simulated the onset of a typical food poisoning. In a few cases the preliminary clinical history was one of continued ill health, on which this infection was superimposed. In the fatal cases the clinical course was rapid; the duration varied from six to eighteen days. In the mild cases among older children the disease usually abated suddenly and recovery was rapid. Among infants mild cases were more protracted, extending from seven to thirty-two days and longer. The infection was most prevalent among bottle-fed infants; cultures from two breast-fed infants also yielded *B. dysenteriae* Sonne.

Endocrinology, Los Angeles

15: 1-96 (Jan.-Feb.) 1931

*Modifications of Structure in Pancreas of Mice Inoculated with Adenocarcinoma. G. De Gaetani, Pavia, Italy.—p. 1.
*Migraine: One Hundred Cases. R. G. Moehlig, Detroit.—p. 11.
*Effect of Estrin on Development of Ovary in Immature Female Rats. S. L. Leonard, R. K. Meyer and F. L. Hisaw, Madison, Wis.—p. 17.
*Suppression of Glucose Combustion by Epinephrine Administration. A. R. Colwell, Chicago.—p. 25.
*Effects of Abdominal Sympathectomy, Adrenal Inactivation and Removal of Stellate Ganglions on Spontaneous Activity of Albino Rat. Z. M. Bacq, Boston.—p. 34.
Anterior Pituitary Hormones. E. P. Bugbee, A. E. Simond and H. M. Grimes, Detroit.—p. 41.
Activity of Goldfish on Testicular Substance Diet. L. L. Stanley and G. L. Tescher, San Quentin, Calif.—p. 55.
Endocrine Glands and Teeth. W. Lintz, Brooklyn.—p. 57.
Effect of Soluble Streptotoxins on Thyroid Glands of Rabbits. F. R. Menne and A. M. Boyden, Portland, Ore.—p. 68.

Modifications of Pancreas of Mice Inoculated with Adenocarcinoma.—The animal chosen by De Gaetani for his experiments was the small white rat inoculated with adenocarcinoma, of the Ehrlich type; this gives a growth of 90 per cent, develops within twenty days and is fatal in about forty days. From eighteen to twenty days after inoculation the animals were killed, the pancreas was removed and the tail, body and head were examined. It was found that the pancreas showed changes chiefly in the islands of Langerhans. These changes consist of hyperplasia, which causes an increase in the volume, which may be doubled, and an increase in number of the islets of Langerhans in different parts of the pancreas. Increase both in volume and in number are accounted for by transformation of zymogenous into insular tissue, by hypertrophy of the persistent elements and by some cell division. These alterations are interpreted as compensatory for the purpose of regulation of dextrose, which is increased in tumor-bearing animals.

Migraine.—Moehlig presents evidence that endocrine factors play a significant rôle in migraine. In 100 cases it was noted that the vast majority of the patients had an enlargement of the thyroid (but the patients lived in a goiter zone). The immediate families of the patients showed a high incidence of tallness and the male patients were above normal height. The basal metabolism was frequently abnormal. The greatest relief obtained was by measures directed toward the thyroid (thyroidectomy and feeding of thyroid substance).

Effect of Estrin on Ovary.—According to Leonard and collaborators, the injection of follicular hormone prevents the ovaries of immature rats from reaching full growth and development as indicated by the weight of the glands. This effect cannot be readily detected unless the injections are continued

beyond the time the animals become sexually mature. The weights of the pituitary, thymus, thyroid and suprarenals remain practically unchanged. Physiologically, the pituitaries of rats receiving estrin have been found to be less potent in their ability to induce sexual precocity in immature female rats and thus, by its influence on the hypophysis, estrin inhibits the development of the ovary.

Suppression of Dextrose Combustion by Administration of Epinephrine.—Dextrose, administered intravenously by Colwell to cats at constant rates of from 0.8 to 1 Gm. per kilogram hourly over periods of eight hours or longer, never failed to cause a rise in the respiratory quotient and hence in the calculated rate of dextrose combustion. Ordinarily from 70 to 90 per cent of the administered dextrose could be accounted for, after a preliminary period of at most three hours, by oxidation and excretion (and in a few cases also by conversion into fat). Under otherwise identical conditions, on addition of epinephrine to the injected solutions the respiratory quotient, and hence the estimated rate of dextrose combustion, never failed to fall. After from three to five hours of dextrose and epinephrine the nonprotein quotient assumed a level near 0.7 and tended to remain fairly constant as long as the epinephrine was continued. During that interval the excretion of dextrose also tended to equal the supply. When the epinephrine was stopped (and the dextrose continued), the quotient rose progressively for at least four hours. In one experiment the continued administration of epinephrine without dextrose led to glycosuria, which reached its maximum during the first eleven hours, then fell until the thirteenth hour, and then became constant for six hours. During the latter period the dextrose and nitrogen excretions were proportional, in the ratio of 1.1 to 1. The epinephrine dosage employed was 0.001 Gm. per kilogram per minute, or about one-fifth the maximum physiologic secretion rate during reflex stimulation of the suprarenals. The experiments are interpreted as indicating that continuous administration of epinephrine in physiologic quantities interferes with, and may even abolish, the combustion of dextrose. Thus it tends to suppress total dextrose utilization, possibly by suppressing the secretion of insulin.

Sympathectomy and Activity.—Bacq states that, in ten albino rats, abdominal sympathectomy did not change the spontaneous activity as compared with that of controls. Abdominal sympathectomy and suprarenal inactivation did not affect for more than ten days the voluntary activity of thirteen rats. During these ten days their activity was slightly below that of their controls. Subsequent removal of one or both stellate ganglions with the upper part of the thoracic sympathetic chains failed to have any significant effect on the spontaneous activity of ten animals, as compared with controls. The enlargement of the seminal vesicles, which occurs in rats after abdominal sympathectomy, was not associated with any change in the activity level. It is concluded that removal of the sympathetic nerve supply to the genital organs and suprarenals does not affect the normal secretion of the endocrine products which are known to affect the spontaneous activity of the rat. Sympathetic denervation of the four limbs does not reduce the muscular activity of the rat to the extent of decreasing the voluntary activity.

Journal of General Physiology, Baltimore

14: 421-545 (March 20) 1931

Temperature Characteristics for Frequency of Breathing Movements in Inbred Strains of Mice and in Their Hybrid Offspring. G. Pincus, Cambridge, Mass.—p. 421.

Physiologic Principle of Minimum Work. C. D. Murray, New York.—p. 445.

Chromosome Balance as Factor in Duration of Life. J. W. Gowen, Princeton, N. J.—p. 447.

Metabolism. J. W. Gowen, Princeton, N. J.—p. 463.

Electrical Variations Due to Mechanical Transmission of Stimuli. W. J. V. Osterhout and S. E. Hill, New York.—p. 473.

Method for Rapid Dialysis of Large Volumes of Protein Solutions. H. A. Abramson and E. B. Grossman, Cambridge, Mass.—p. 487.

Sorption of Bacteriophage by Living and Dead Susceptible Bacteria: Equilibrium Conditions. A. P. Krueger, Princeton, N. J.—p. 493.

Theory of Nervous Conduction. N. Rashevsky, East Pittsburgh, Pa.—p. 517.

Analysis of Bioluminescences of Short Duration, Recorded with Photo-Electric Cell and String Galvanometer. E. N. Harvey and P. A. Snell, Princeton, N. J.—p. 529.

Journal of Industrial Hygiene, Baltimore

13: 49-84 (Feb.) 1931

*Linseed Dermatitis. M. H. Barnes.—p. 49.

Employment "Sickness and Death Rates." H. W. Stevens, Boston.—p. 56.

Studies on Experimental Pneumonoconiosis: VI. Inhalation of Asbestos Dust: Its Effect on Primary Tuberculous Infection. L. U. Gardner and D. E. Cummings, New York.—p. 65.

Linseed Dermatitis.—Barnes states that linseed dermatitis appears as maculopapular lesions, showing frequent red follicular papules. It occurs chiefly on the dorsal surface of the hands, and on the anterior aspects of the forearms and thighs, but occasionally on the face, upper arms and feet. The rash produces a severe itching or burning sensation. The results from the series of cases reported indicate that linseed cake contains a skin irritant to which some individuals react without previous sensitization and that this irritant is not present in pure linseed oil or in impurities removed from linseed by passing it through sieves.

Journal of Infectious Diseases, Chicago

48: 243-336 (March) 1931

Ultramicroscopic Precipitation Reaction in Syphilis. A. M. Malloy and R. L. Kahn, Ann Arbor, Mich.—p. 243.

Toxin-Antitoxin Union. A. V. Stoesser, Minneapolis.—p. 255.

Bacterial Flora of Lower Respiratory System of Normal Dogs. H. Livingstone and W. E. Adams, Chicago.—p. 282.

*Acidity Produced in Brucella Cultures. S. H. McNutt and P. Purwin, Ames, Iowa.—p. 292.

*Bacterial Flora of Isolated Intestinal Segments. V. Smith, Portland, Ore.—p. 295.

*Relation of Streptococci to Filtrable Virus of Epizootic Encephalitis of Fox. E. C. Rosenow, Rochester, Minn.—p. 304.

So-Called Splenic Lesions in Canine Rabies. R. D'Aunoy and J. L. Beven, New Orleans.—p. 335.

Acidity in Brucella Cultures.—McNutt and Purwin state that broth or peptone solution in which *Brucella* was grown without sugar became strongly alkaline. When dextrose, levulose, galactose, xylose or arabinose was added, the medium still became alkaline even though determinations of sugar showed a loss. When sugars were added to a solution of nutrose or a mixture of nutrose solution and serum, and the medium was inoculated with *Brucella*, evident traces of acid were often produced in dextrose, levulose, galactose and xylose. With arabinose, greater quantities of acid were formed. When *Brucella* was limited to a sugar as the only source of carbon, experiments indicated that growth took place in both arabinose and xylose. It was impossible to classify the strains according to source when grown in carbohydrate mediums.

Bacterial Flora of Intestinal Segments.—Isolated segments from the small intestines of dogs were studied by Smith to determine the types of organisms present. Three hundred and seven specimens from forty dogs were examined. Of the segments used, twenty were ileac, eighteen jejunal and two duodenal. No significant difference in the flora of the loops at different levels was observed. *Clostridium welchii* was present in 87.5 per cent of the dogs and *Bacillus coli* in 85 per cent. Nonhemolytic streptococci were found in 45 per cent, hemolytic streptococci in 35 per cent, *Staphylococcus albus* in 32.5 per cent, green-producing streptococci in 10 per cent, *Staphylococcus aureus* in 7.5 per cent, *Bacterium fecalis-alkaligenes* in 5 per cent, *Proteus vulgaris* in 2.5 per cent and an unidentified diphtheroid bacillus in 2.5 per cent.

Relation of Streptococci to Filtrable Virus of Epizootic Encephalitis of Fox.—The consistent isolation of a streptococcus with distinctive cultural, serologic and neurotropic properties, from the brains of young foxes and dogs, less commonly from the brains of rabbits which had succumbed to encephalitis following the inoculation of virus, is reported by Rosenow. The characteristic symptoms and lesions that occur following intracisternal inoculation of the virus have been closely simulated following similar injection of properly gaged doses of a streptococcus that has passed through few to many rapidly repeated subcultures. From one strain of the streptococcus isolated from the brain of a dog that succumbed to virus and after many (thirty-three) subcultures, a filtrable virus seemingly has been produced. The period of incubation, the symptoms during life and the lesions after death in the series of animals that were given injections of the artificially

produced virus were similar to those following the injection of natural virus. This was true in each of six animals that had been given injections of a virus following six animal passages. The streptococcus was present only in small numbers and was isolated from and demonstrated in the lesions of the brain with the same difficulty in this series of experiments as in those performed with natural virus. The cultural characteristics, the serologic reactions and the virulence of the streptococcus from the animals given injections of the natural virus were similar to the reactions in the animals into which artificially produced streptococcal virus was injected. The streptococcus from the brains of animals that had been given injections of natural virus protected other animals against the artificially produced virus, and vice versa.

Journal of Nervous & Mental Disease, New York

73: 241-352 (March) 1931

Fiber Systems in Midbrain Which Pass from the Pedunculus Cerebri into the Lemniscus Medalis. W. J. C. Verhaart, The Hague, Holland. —p. 241.
Traumatic Lesion of Brachial Plexus and Its Roots with Symptoms Simulating Cervical Rib: Case. L. M. Tocantins, Cleveland.—p. 258.
Treatment of Tabic Optic Nerve Atrophies with Sulphur. L. Winkler, Oradea-Mare, Roumania.—p. 276.
*Clinicopathologic Study of Intracranial Arachnoid Membrane. L. Davis and H. A. Haven, Chicago.—p. 286.

Intracranial Arachnoid Membrane.—A series of ten cases showing definite histopathologic changes in the arachnoid membrane are presented by Davis and Haven. These include one verified intracranial tumor, two with the pathologic process centering about the optic chiasm and seven with the clinical picture of an intracranial neoplasm in which no tumor was verified at operation. Each of these showed definite changes in the arachnoid membrane, which were classified into three different groups according to the histopathologic picture each presented. Two of the cases gave a history of trauma sufficient to be considered as an etiologic factor. The authors believe it is important to classify these patients as "tumor suspects" rather than to make a diagnosis of arachnoiditis. In this manner they are not apt to be dismissed from future careful and close observation for the early evidences of symptoms of more serious intracranial pathologic changes. At present these clinical and surgical observations should not be classed as an entity. For the purpose of classifying the microscopic changes observed under such circumstances in the future, three main types are suggested; namely, inflammatory, fibrotic and hyperplastic.

Journal of Preventive Medicine, Baltimore

5: 81-172 (March) 1931

*Intratracheal Inoculation of Monkeys with Pneumococci. G. W. Stuppy, I. S. Falk and M. A. Jacobson, Chicago.—p. 81.
*Experimental Pneumonia in Rabbits Produced by Intrabronchial Insufflation of Pneumococci. G. W. Stuppy and I. S. Falk, Chicago.—p. 89.
Nature of Immunity in Lungs of Rabbits Following Immunization with Pneumococci. G. W. Stuppy, P. R. Cannon and I. S. Falk, Chicago. —p. 97.
Preparalytic Poliomyelitis in Monkey: Changes in Temperature, Spinal Fluid, Blood and Erythrocyte Sedimentation. P. H. Harmon, H. J. Shaughnessy and F. B. Gordon, Chicago.—p. 115.
Missed Infections, Abortive and Relapsing Cases of Experimental Poliomyelitis. P. H. Harmon, H. J. Shaughnessy and F. B. Gordon, Chicago.—p. 139.
Attempts to Immunize Human Volunteers with Staphylococcus Filtrates That are Toxic to Man When Swallowed. G. M. Dack, E. O. Jordan and O. Woolpert, Chicago.—p. 151.
*Effects on Guinea-Pigs of Seitz and Berkefeld Filtrates of Sputum from Tuberculous Patients. A. Larson, Chicago—p. 161.

Intratracheal Inoculation with Pneumococci.—The intratracheal inoculation of *Macacus rhesus* and *Cebus capucinus* monkeys with varying amounts of virulent type I pneumococci by Stuppy and his associates did not result in lobar pneumonia, although in most cases it brought about an increase in temperature and leukocyte reactions, with a pneumococcus septicemia. Recovery usually occurred within a week after inoculation. Only two monkeys out of thirteen died from the pneumococcus infection. The lungs were found normal except for an increase in the number of polymorphonuclear leukocytes in the interstitial tissue, blood vessels and bronchi.

Experimental Pneumonia in Rabbits.—The intrabronchial insufflation of rabbits with pneumococci of uniformly high virulence by Stuppy and Falk gave rise to a bronchopneumonia that usually caused death in from two to five days, with septicemia and a generalized distribution of pneumococci in the lungs. In some animals there was acute inflammation of the interstitial tissue of the lung and perivascular and peribronchial lymphangitis. Suppurative bronchitis and pleuritis were only occasionally seen. The factor of resistance to pneumococcus infection among individual rabbits is of importance in determining the type of lesions produced by the introduction of pneumococci into the lung. Attempts to lower resistance by chilling were not successful, as the chilling did not appreciably increase the rabbits' susceptibility to pneumococci but did apparently predispose them to spontaneous infections, which were frequently fatal to the control rabbits (chilled but not inoculated). The lesions induced in the lungs of the rabbits by the insufflation of types I, II and III pneumococci of the same degree of virulence (as measured for white mice) were on the whole quite similar. The virulence of the pneumococcus employed, rather than its serologic type, would appear to be the important factor in the production of infection.

Effects on Guinea-Pigs of Sputum Filtrates from Tuberculous Patients.—Filtrates of sputum from tuberculous patients, containing numerous tubercle bacilli, were inoculated subcutaneously by Larson into forty-three guinea-pigs, ten receiving a Seitz filtrate, twenty-two a Berkefeld filtrate and eleven a filtrate passed through both Seitz and Berkefeld filters. None of the animals developed the cachexia that is said to be characteristic of the more usual form of infection from filtrates nor was there any enlargement of the inguinal lymph nodes at the point of inoculation. At necropsy, no lesions suggestive of tuberculosis were found. Smears made from the tracheobronchial and retroperitoneal lumbar lymph nodes showed no acid-fast rods or granules. Control guinea-pigs inoculated with small doses of unfiltered sputum from each patient died with generalized tuberculosis. There is no evidence in these results that tuberculous infection is caused by Seitz or Berkefeld filtrates of sputum. When considered in connection with the numerous negative results of others, they make it probable that the positive observations that have been reported are due to some other factor than a filtrable virus.

Kansas Medical Society Journal, Topeka

32: 73-108 (March) 1931

Hip Joint Diseases. W. F. Schroeder, Newton.—p. 73.
Blood Sedimentation Test in Obstetrics and Gynecology. M. D. Ballard and L. A. Calkins, Kansas City.—p. 77.
Surgical Female Abdomen. L. V. Dawson, Ottawa.—p. 81.
Refraction. C. A. Thomas, Coffeyville.—p. 86.
State Medicine. E. E. Beechwood, Bartlesville, Okla.—p. 87.
Case of Lipodystrophy. W. H. Algie, Halstead.—p. 90.
Supernumerary Breasts: Case. R. C. Harner, Howard.—p. 91.
Ruptured Ectopic Pregnancy with Autotransfusion: Case. C. J. McGee, Leavenworth and S. L. Axford, Lansing.—p. 91.

Laryngoscope, St. Louis

41: 157-220 (March) 1931

Possibilities in Quantitative Correlation Between Air and Bone-Transmitted Speech. A. G. Pohlman, St. Louis.—p. 157.
Histologic Anatomy of Internal Ear: Cochlea. M. F. Jones, New York. —p. 166.
*Case of Lateral Sinus Thrombosis Representing Some Interesting Features. L. Baer, Philadelphia.—p. 169.
Nose Bleeding. J. J. Rainey, Troy, N. Y.—p. 173.
Labyrinthine Gastric Reflexes. J. E. Lebensohn, Chicago.—p. 175.
*Convenient Method of Shrinking Sphenoid Dranage Area. J. E. Pressman, Los Angeles.—p. 181.
Diphtheria of Adenoids. A. F. Laszlo, New York.—p. 185.
Perforating Tuberculous Ulcer of Palate. D. H. Solo, Philadelphia. —p. 187.
Pitfalls of Local Tonsillectomy. H. Neivert, New York.—p. 190.
*Lipiodol as Diagnostic Aid in Chronic Paranasal Sinus Disease and Bronchiectasis. A. C. Dean and C. F. Morsman, Hot Springs, S. D. —p. 196.
Neosilvol in Sinusography. D. R. Womack and J. R. Hume, New Orleans.—p. 203.

Lateral Sinus Thrombosis.—Baer reports a case of lateral sinus thrombosis that confirms the well known clinical observations that: 1. Lateral sinus thrombosis may occur without giving the patient any ill effects. 2. When the ends of the thrombosed sinus are found to be organized and obliterated, no attempt should be made to disturb the sinus or ligate the jugular vein.

Method of Shrinking Sphenoid Drainage Area.—Pressman describes a convenient method of shrinking the sphenoid drainage area. The tip of the ordinary DeVilbiss spray is turned upward to a little beyond a right angle. It is then inserted into the mouth on one side of the uvula until it rests on the posterior pharyngeal wall. It is then slightly rotated toward the side to be sprayed so that the tip of the nozzle looks directly at the spheno-ethmoidal area. Air pressure is then applied to the spray bottle. It has been found advantageous to have the patient lie on or bend the head toward the side to which the solution is applied, since this makes for a better distribution. If there is a tendency toward gagging, the patient is directed to hold as still as possible, the physician utilizing the brief period between paroxysms for application of air pressure but not removing the spray tip from its position during the procedure. A preliminary painting of the throat with a weak solution of cocaine does away with enough of the tendency toward gagging to enable the spraying to take place without difficulty. The method has also proved useful for cocainization of adenoid masses to be removed under local anesthesia and in other procedures in which local anesthesia in the region of the posterior nares is desired.

Iodized Poppy-Seed Oil as Diagnostic Aid in Sinus Disease and Bronchiectasis.—Dean and Morsman believe that many errors in the diagnosis of sinus and bronchial conditions may be corrected by the use of iodized poppy-seed oil. The posterior anterior film by the Granger method and one lateral film of the sinuses and posterior anterior and lateral films of the chest have been most satisfactory in the study of their cases. Antrums should be washed before the instillation of iodized poppy-seed oil. Shadows cast by the oil will show the presence of polypi and thickening of the mucous membrane in a large number of sinus cases and reveal the cause of chronic and recurrent cough, otherwise undetermined. Little if any therapeutic benefit can be expected in sinus infections. Some therapeutic benefit can be expected in bronchiectasis. Injection through natural openings into the sinuses following shrinking and lavage and the passive method for introduction into the bronchi have proved most satisfactory in the authors' experience. Roentgenograms should be made immediately after introduction of iodized poppy-seed oil into the paranasal sinuses or bronchi. Diagnosis of chronic sinusitis and bronchiectasis may be made by means of the instillation of iodized poppy-seed oil in otherwise undiagnosed cases. Iodized poppy-seed oil 40 per cent is, in the authors' experience, the best contrast medium to use.

Medical Journal and Record, New York

133: 261-312 (March 18) 1931

Life's Origin. F. Herb, Chicago.—p. 261.
Modern Conception of Deafness. H. Hays, New York.—p. 264.
Psychic Value of Music and Color in Infant and Child Nutrition. G. D. Scott, New York.—p. 266.
Magnesium Synergism in Chronic Arthritis. E. Podolsky, Brooklyn.—p. 270.
Working Hypothesis for Study of Cancer. D. G. Dudley, Endicott, N. Y.—p. 274.
Respiratory Diseases. J. W. Shuman, Los Angeles.—p. 278.
Spinal Anesthesia for Obstetric Surgery. A. L. McDonald, Duluth, Minn.—p. 279.
Brucella Abortus Agglutination Reactions in Gynecologic Patients. G. L. Moench and A. D. Sheplar, New York.—p. 281.
The Abused Cervix. J. W. Kennedy, Philadelphia.—p. 283.
Cesarean Section and Late Toxemias of Pregnancy. G. L. Carrington, Burlington, N. C.—p. 285.
Differential Diagnosis of Pregnancy. J. Walker, Philadelphia.—p. 288.
Nonspecific Protein Therapy by Intradermal Route in Gonococcic Salpingitides. J. S. Diasio, New York.—p. 291.
Case of Tuberculosis of Clitoris. G. L. Moench, New York.—p. 293.
Therapeutic Value of Oleic Acid and Bile Salts in Biliary Tract Disease. B. Levinson, Freeport, N. Y.—p. 295.
Medical Observations of Marco Polo. L. L. Stanley, San Quentin, Calif.—p. 298.

Military Surgeon, Washington, D. C.

68: 305-454 (March) 1931

Military Obligations of Medical Profession. M. W. Ireland.—p. 305.
Chest Surgery in Treatment of Pulmonary Tuberculosis. E. H. Bruns and J. Casper.—p. 311.
Industry and National Defense. G. Van H. Moseley.—p. 346.
Military Medicolegal Psychiatry: Pathologic Desertion. T. A. Williams.—p. 355.
Carcinoma Arising from Epithelial Rest in Obliterated Branchial Cleft. F. J. Vokoun.—p. 378.

Minnesota Medicine, St. Paul

14: 203-288 (March) 1931

Theories Concerning Etiology of Acute Rheumatic Fever. R. A. Kinsella, St. Louis.—p. 203.
Coronary Occlusion. H. W. Rathe, Waverly, Iowa.—p. 206.
Clinical Features of Chronic Pulmonary Fibrosis. A. T. Laird, Nopeming.—p. 209.
Causes of Death from Acute Appendicitis. A. L. McDonald, Duluth.—p. 212.
Prostate in General Examination. A. E. Sohmer, Mankato.—p. 216.
Acute Dilatation of Stomach. J. Morrow, Austin.—p. 218.
Nonmyxedematous Hypothyroidism. A. N. Hensel, St. Paul.—p. 221.
Medical Pioneers of Minnesota. W. J. Mayo, Rochester.—p. 224.
Art of Medicine. W. C. Alvarez, Rochester.—p. 227.
Fibrosarcoma of Meckel's Diverticulum Producing Intestinal Hemorrhage. L. S. Faust and W. Walters, Rochester.—p. 233.
Irradiation of Carcinoma of Cervix Uteri. H. H. Bowing and R. E. Fricke, Rochester.—p. 237.
Relationship of Epileptic Seizures to Brain Tumor. H. L. Parker, Rochester.—p. 245.
Backache from Orthopedic Viewpoint. R. K. Ghormley, Rochester.—p. 249.
Importance of Toxic Goiter Complicating or Complicated by Other Conditions Requiring Surgical Interference. C. Mayo 2d, Rochester.—p. 254.
Intra-Abdominal Abscess. P. E. Stangl, St. Cloud.—p. 257.
Alcoholic Polyneuritis with Cranial Nerve Involvement: Korsakoff Syndrome. G. R. Kamman, St. Paul.—p. 259.
Large, Benign Mole of Scalp. E. W. Humphrey, Moorhead.—p. 262.

New England Journal of Medicine, Boston

204: 583-636 (March 19) 1931

Fractures of Tuberosities of Tibia. H. G. Lee, Boston.—p. 583.
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Heart Murmurs and Insurance. F. H. McCrudden, Boston.—p. 598.
Normal Arterial Blood Pressure and Its Measurement. S. Weiss, Boston.—p. 600.
Abnormal Blood Pressure. R. S. Palmer, Boston.—p. 602.
Treatment of Hypertension. J. P. O'Hare, Boston.—p. 602.
What the Public Has a Right to Expect of Clinics. M. M. Davis, Chicago.—p. 604.
Vaginal Speculum for Use in Children. H. Heinz, New Bedford, Masss.—p. 607.

New Jersey Medical Society Journal, Orange

28: 187-286 (March) 1931

Development of Public Welfare Work. W. J. Ellis, Trenton.—p. 187.
Influence of Public Health Activities on Medical Practice. J. Levy, Newark.—p. 193.
Health Department Growth in New Jersey. D. C. Bowen, Trenton.—p. 196.
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The Doctor and the Law. R. Peacock, Mount Holly.—p. 203.
Malnutrition in Children; Attempt at Standardization of Dietary. L. C. Rosenberg, Newark.—p. 208.
Essentials in Infant Feeding. P. Nicholson, Philadelphia.—p. 212.
Diet in Eczema of Infants. F. I. Krauss, Chatham.—p. 217.
Eczema in Infancy, from Dermatologist's Standpoint. F. J. McCauley, Newark.—p. 223.
Modern Treatment of Varicose Veins. V. E. Johnson, Atlantic City.—p. 229.
Intradural Caudal Anesthesia as Office Procedure. G. T. Spencer, Hornell, N. Y.—p. 235.
Skin Test for Whooping-Cough. C. V. Craster and E. Smith, Belleville.—p. 236.
Thoughts on Medical Economics and Medical Practice. S. Rubinow, Newark.—p. 238.

New Orleans Medical and Surgical Journal

83: 587-670 (March) 1931

The Why of Vital Statistics. J. G. Dempsey, New Orleans.—p. 588.
Control of Venereal Diseases in Mississippi with Competent Treatment by General Practitioners. H. R. Hays, Jackson.—p. 591.
Immediate Handling of Sciatic Pain. H. Daspit, New Orleans.—p. 596.
Perineal Prostatectomy. D. M. Davis, Baltimore.—p. 599.
Suprapubic Prostatectomy. D. T. Milam, Monroe.—p. 605.
Complications Following Prostatectomy. H. W. E. Walther and R. M. Willoughby, New Orleans.—p. 607.
Internal Derangement of Knee Joint, Especially the Semilunar. P. A. McIlhenny, New Orleans.—p. 618.
Plastic Surgery and Its Relation to Industrial Surgery. I. Cohn, New Orleans.—p. 623.
Roentgen Diagnosis of Pulmonary Tuberculosis with Especial Reference to Pathologic Classification. G. P. Sims, Gulfport, Miss.—p. 631.
Intussusception, Roentgenologically Considered. L. A. Fortier and T. T. Gately, New Orleans.—p. 637.
Use of Whole Blood in Pediatric Work. N. C. Womack, Jackson, Miss.—p. 639.
Raynaud's Disease: Presentation of Early Case. B. H. Texada, Alexandria.—p. 643.
Types of Pneumococci in Far South. J. C. Barton, New Orleans.—p. 649.

Northwest Medicine, Seattle

30: 109-154 (March) 1931

*Benign Infiltrations in Childhood Type of Tuberculosis. S. G. Henricke, Portland, Ore.—p. 109.
Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis. W. E. Stallings, Boise, Idaho.—p. 121.
Artificial Pneumothorax in Home Treatment of Pulmonary Tuberculosis. J. J. Markey, Seattle.—p. 126.
Subcutaneous Emphysema Following Bronchopneumonia of Influenzal Type. H. P. Rush, A. Adkinson and T. E. Hardwick, Portland, Ore. —p. 129.
Vomiting in Infancy. E. J. Barnett, Spokane, Wash.—p. 129.
Sporotrichosis on Pacific Coast. H. J. Templeton and C. J. Lunsford, Oakland, Calif.—p. 132.
Local Anesthesia as Routine in Mastoid Surgery. C. Firestone, Tacoma, Wash.—p. 136.
Hyperthyroidism: Practical Points in Physiology. D. Metheny, Seattle. —p. 140.
Crypts of Morgagni: Clinical Significance. S. H. Tashian, Seattle.—142.

Benign Infiltrations in Childhood Type of Tuberculosis.—Henricke states that infiltrations may occur in the lungs of tuberculous children, in which, under reasonably hygienic conditions, the prognosis is excellent. This has been repeatedly recorded in the literature and efforts have been made to coin a properly descriptive name for them, and various theories have been advanced in an effort to arrive at a true concept of their pathogenesis. Much confusion has resulted from the large number of synonyms used; namely, recurring hilus tuberculosis (Wessler and Bass), epituberculosis (Eliasberg and Neuland), paratuberculosis (Engel), chronic tuberculous hilus pneumonia (Greenberg), perifocal infiltration (Birk and Hager), collateral inflammation (Tendeloo), perifocal inflammation (Ranke), splenopneumonie (Grancher), gelatinous infiltration (Frankel), and pulmonary tuberculosis of the epituberculous type (Weech and Chu). The author proposes a properly descriptive name, which will embrace all the various forms of infiltrations of an apparently similar character and which will have as definite a meaning to the general practitioner of medicine as to one primarily interested in tuberculosis or pediatrics; namely, "benign infiltrations in the childhood type of tuberculosis." He presents the subject in textbook fashion for the first time, to his knowledge, in the American literature.

Pennsylvania Medical Journal, Harrisburg

34: 363-462 (March) 1931

Treatment of Diabetes Mellitus in Presence of Other Acute Febrile Diseases. L. H. Mayer, Johnstown.—p. 363.
Abolishing Coma in Diabetes and Its Treatment if Present. F. E. Ross, Erie.—p. 365.
Management of Ambulant Diabetic: Necessity for Diabetic Centers. J. D. Paul, Philadelphia.—p. 367.
Proper Use of Insulin (Iletin) and Diet in Juvenile Diabetes. H. A. Rohrbach, Bethlehem.—p. 368.
Diphtheria Immunization. H. J. Benz, Pittsburgh.—p. 372.
Tragedy of Appendicitis. H. A. Royster, Raleigh, N. C.—p. 376.
The Preprostatic. M. Muschat, Philadelphia.—p. 380.
Lesions Causing Obstruction at Vesical Neck. A. E. Bothe, Philadelphia. —p. 383.
Carcinoma of Bladder. R. Y. Grone, Danville.—p. 389.
Eustachian Bouginage: New Technic in Severe Obstructions. H. S. Wieder, Philadelphia.—p. 394.
Interstitial Emphysema Following Catheterization of Eustachian Tube. G. F. Gracey, Harrisburg.—p. 396.
Relationship of Physician to Mentally Handicapped Child. H. V. Pike, Danville.—p. 401.

Philippine Journal of Science, Manila

44: 253-368 (March) 1931

Eimeria Bukidnonensis, a New Coccidium from Cattle, and Other Coccidial Parasites of Domesticated Animals. M. A. Tubangui, Manila. —p. 253.
Trematode Parasites of Philippine Vertebrates: Two Echinostome Flukes from Rats. M. A. Tubangui, Manila.—p. 273.
Two New Madreporarian Corals from California. L. A. Faustino, Manila.—p. 285.
Coral Reefs of Philippine Islands. L. A. Faustino, Manila.—p. 291.
Survey of Mongrel Dogs of Manila, Philippine Islands, for Helminthic and Blood Protozoan Parasites. J. H. St. John, J. S. Simmons and F. H. K. Reynolds, Manila.—p. 309.
Thyroid Gland of Carabao. M. D. Sumulong, Los Baños, Laguna.—p. 313.
Vital Capacity Studies Among Filipinos: Standards for Men from 15 to 30 Years of Age. N. Cordero and M. Ocampo, Manila.—p. 325.
New or Little Known Tipulidae from Eastern Asia (Diptera). C. P. Alexander, Amherst, Mass.—p. 339.

Physical Therapeutics, New York

49: 101-148 (March) 1931

Review of Past Year's Progress in Dietetics. J. W. Torbett, Marlin, Texas.—p. 101.
Static Induced Currents of Morton. W. J. Turrell, Oxford, England. —p. 105.
Muscular Contractures and Their Treatment by Means of Reeducative Movement Combined with Hand Manipulation. T. A. Williams, Miami Beach, Fla.—p. 113.
Case of Tabes Treated by Electrothermic and Other Physical Measures. C. Pope, Louisville, Ky.—p. 117.
Back Strain. C. L. Payzant, West Medford, Mass.—p. 125.

Public Health Reports, Washington, D. C.

46: 693-763 (March 27) 1931

Antigenic Value of Scarlet Fever Streptococcus Toxin Modified by Action of Formalin. M. V. Veldee.—p. 693.
Experimental Addiction of Animals to Opiates. L. Kolb and A. G. DuMez.—p. 698.

Rhode Island Medical Journal, Providence

14: 35-50 (March) 1931

Perimetry and Its Application to Intracranial Lesions. R. F. Hacking, Providence.—p. 35.
Diagnostic Value of Bile Drainage. R. S. Bray, Providence.—p. 38.

South Carolina Medical Assn. Journal, Greenville

27: 57-81 (March) 1931

Some Aspects of Prostatic Hypertrophy. C. Thompson, Millen, Ga.—p. 59.
Mucous Colitis a Misnomer. H. S. Black, Spartanburg.—p. 60.

Southern Medical Journal, Birmingham

24: 273-374 (April) 1931

Lesions of Latent Syphilis. A. S. Warthin, Ann Arbor, Mich.—p. 273.
Enteral and Parenteral Factors in Causation of Diarrhea. W. M. Marriott, St. Louis, Mo.—p. 278.
Certain Problems in Management of Thyroid Diseases. S. L. Ledbetter, Jr., Birmingham.—p. 284.
Gangrene and Necrosis of Uterus. E. Dunlap, Dallas, Texas.—p. 290.
Pellagra. J. T. Martin, Oklahoma City.—p. 297.
Keratitis: Nutritional, Neurotrophic, Dystrophic. W. R. Buffington, New Orleans.—p. 300.
Gastro-Intestinal Symptoms in Anorectal Diseases. F. M. Durham, Columbia, S. C.—p. 311.
Chronic Encephalitis: Stramonium Treatment. W. J. Otis, New Orleans. —p. 314.
Spondylolisthesis, with Especial Reference to Industrial Case. J. E. Stewart, St. Louis.—p. 317.
Brucella Abortus Infection in Man: Clinical Manifestations and Diagnosis. W. F. Lake and A. J. Ayers, Atlanta, Ga.—p. 321.
Acute Abdominal Disease: 1,232 Cases. R. M. Harbin and W. P. Harbin, Rome, Ga.—p. 326.
Mixed Tumor Involving Hard and Soft Palate: Case Report. A. Blumberg and G. H. B. Terry, Oteen, N. C.—p. 333.
Field Studies of Human Intestinal Parasites in Tennessee. A. E. Keller, Nashville, Tenn.—p. 336.
Vesical Diverticulum. J. H. Smith, Memphis, Tenn.—p. 344.
Vesico-Intestinal Fistula: Three Cases. N. F. Ockerblad, Kansas City. —p. 346.
Bronchial Obstruction from Intrabronchial Granulations in Child Two Years Old. J. B. Stone, Richmond, Va.—p. 350.
Melanomatosis. J. E. Knighton, Shreveport, La.—p. 354.
Probable Primary Sarcoma of Vertebrae: Cured Case. H. T. Simon, New Orleans.—p. 356.
Malignancy of Lower Lip, Complicated by Mouth Infections. S. J. Wilson, Fort Worth, Texas.—p. 359.
Allergy as Cause of Gastro-Intestinal Disorder. W. W. Duke, Kansas City.—p. 363

Texas State Journal of Medicine, Forth Worth

26: 771-846 (March) 1931

Observations on Sarcoma. A. O. Singleton and W. A. Hyde, Galveston. —p. 778.
Roentgen Studies of Cecum. R. P. O'Bannon, Fort Worth.—p. 783.
Malignant Tumors of Renal Pelvis. C. M. Simpson, Temple.—p. 787.
Inflammatory Obstruction at Bladder Neck; Its Early Recognition and Treatment. K. B. King, Dallas.—p. 791.
Prolapse of Ureter. J. L. White, Houston.—p. 795.
Surgical Conditions of Upper Urinary Tract in Their Relation to Nonspecific Urethritis. R. L. Davis, San Antonio.—p. 797.
Differentiation of Types of Nephritis, with Brief Report of Four Cases. N. D. Buie and T. G. Glass, Marlin.—p. 802.
Changing Attitude Toward Cancer. F. S. Schoonover, Jr., Fort Worth. —p. 806.
Diagnosis of Early Malignancy. E. F. Cooke, Houston.—p. 810.
Leukocytic Response to Acute Infections. B. R. Collins, Wichita Falls. —p. 812.
Crystalline Lens System. J. O. McReynolds, Dallas.—p. 816.
Bureau of Food and Drugs as Related to Public Health. E. G. LeMay, Austin.—p. 818.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 525-568 (March 28) 1931

*Diverticula of Colon and Their Sequelae. P. J. Lockhart-Mummery and H. G. Hodgson.—p. 525.
*Keloid Ovary. T. C. Clare.—p. 527.
*Interpretation of Pain in Infancy. W. Sheldon.—p. 530.
*Case of Glossopharyngeal Neuralgia. J. P. Martin.—p. 533.
Two Interesting Cases of Purpura. H. Coke.—p. 535.
Mycosis Fungoides Following Laparotomy. R. Owen-Jones.—p. 537.

Diverticula of Colon and Their Sequelae. — Lockhart-Mummery and Hodgson state that diverticula of the colon are not the result of inflammation, and inflammatory conditions of the colon wall which often follow diverticula are always secondary. In spite of treatment, diverticula of the colon, once formed, tend to increase both in size and in number. This increase is often slow and may be unaccompanied by symptoms. In the absence of secondary inflammation, diverticula do not, as a rule, cause trouble, but exceptionally sudden perforation from the giving way of a diverticulum may occur apart from any complicating inflammation. A definite diverticulitis is always a serious lesion, with grave possibilities. A sudden disaster from perforation is not so uncommon as is often supposed. Suppurative diverticulitis is occasionally followed by carcinoma, but it is not a common causal factor of cancer. Operative treatment should not be deferred until after some grave complication has occurred but should be timed so as to anticipate and to prevent such disaster.

Keloid Ovary.—Clare suggests that the excessive formation of fibrous tissue found sometimes in the ovary may be looked on as a form of keloid overgrowth of fibrous tissue. It is a keloid scar formed as a disordered or exaggerated regenerative process in the healing of the scar left by the ruptured follicle. It is not a disease in the sense that it is a reaction to a morbid extrinsic factor, such as bacterial infection. There is no evidence of inflammation, and it is incorrect to speak of the condition as chronic ovaritis. It is a disease, however, in the sense that it is the cause of symptoms of disease. He believes that it is wrong to regard the sclerosis of the ovary as secondary to changes in the endometrium and that such a view of the pathology of the condition is at variance with the teachings of physiology that it is the ovary which influences the uterus, and not vice versa. The primary change is in the ovary, and it consists of a failure of the regenerative process, whereby an excess of fibrous tissue takes the place of the small fibrous scar that normally closes the stigma.

Interpretation of Pain in Infancy.—According to Sheldon, the commonest effect of pain on a baby is to make him cry, and much help is to be gained from a study of the characters of this expression. Pain is by no means the only cause of a baby's crying; hunger, cold, a soiled napkin, or simply a state of boredom are contributory factors. It is not until the child exercises his will that crying due to temper makes its appearance; this is a cause which is exceptional in those under 6 months of age. The features that should always be noted are whether the cry is intermittent or continuous, whether it is a piteous wailing or a short, sharp scream, and whether it occurs at any particular time of the day or night. Does it bear any relation to the times of feeding, being relieved or aggravated by food? Does it cease after the belching of a good deal of wind? The history may show that the pain only accompanies certain physiologic performances such as sucking, micturition or defecation. Under the stress of severe pain the infant may not cry because he is holding his breath, as frequently happens in severe colic. The baby's posture during the attacks of pain should be carefully noted. It may be that the hips are flexed to bring the thighs up on to the abdomen, while the arms may be bent, with the elbows firmly pressed against the sides. In other cases, the infant may become rigidly extended, with arched back, so that he supports himself by his head and heels. Finally, on clinical examination there may be found areas of distinct tenderness associated with pain, indicating its localization.

Glossopharyngeal Neuralgia.—Martin believes that glossopharyngeal neuralgia is exactly comparable to trigeminal neuralgia. The pain is of the same severity and has the same spasmodic shock-like character. In both conditions it is excited by peripheral stimulation within the area of distribution of the affected nerve (in glossopharyngeal neuralgia chiefly by swallowing, the affected nerve being distributed to the throat and in trigeminal neuralgia by eating, talking, and washing the face, the affected nerve being distributed to the mouth and face). Long remissions of the pain may occur in both varieties. Further, the neuralgia may remain limited to, or may be preponderant in, certain branches of the nerve. In the author's patient it was limited at first to the tympanic branch.

Journal of Physiology, London

71: 229-339 (March 23) 1931

Equilibrium Between Oxygen and Hemoglobin: Oxygen Dissociation Curve of Dilute Blood Solutions. W. H. Forbes and F. J. W. Roughton.—p. 229.
Id.: Oxygen Dissociation Curves of Dilute Solutions of Horse Hemoglobin. W. H. Forbes.—p. 261.
Studies on Intra-Ocular Pressure: Physicochemical Factors Controlling Intra-Ocular Pressure. P. M. Duke-Elder and W. S. Duke-Elder.—p. 268.
Influence of Adrenalin on Carbohydrate Metabolism. D. Leys.—p. 275.
Cardiac Output and Blood Distribution. H. Barcroft.—p. 280.
Adequate Electrical Stimuli for Posture and Movement. G. Briscoe.—p. 292.
Concerning Amount of Nitrogen Gas in Tissues and Its Removal by Breathing Almost Pure Oxygen. J. A. Campbell and L. Hill.—p. 309.
Iso-Electric Point of Sheep Oxyhemoglobin Determined by Titration Curves with Glass Electrode. K. G. Terroux.—p. 323.
On Influence of Posture on Kidney Function. T. Ni and P. B. Rehberg.—p. 331.

Lancet, London

1: 567-624 (March 14) 1931

*Trigeminal Neuralgia and Its Treatment. W. Harris.—p. 567.
Lessons on Distribution of Infectious Diseases in Royal Navy. S. F. Dudley.—p. 570.
*Observations on Skin Eruptions Following Vaccination. H. D. Chalke.—p. 578.
Modifications of Kirchner's Wire Extension Method. C. M. Page.—p. 582.
Simple Method for Blood Culture. J. E. McCartney.—p. 583.
Thrombophlebitis Migrans. G. C. Low and A. B. Cook.—p. 584.
Thyroid Tolerance and Benefit in Obesity. H. Carlill.—p. 585.

Trigeminal Neuralgia and Its Treatment.—Harris states that, in slight cases, medicinal treatment by gelsemium and the milder analgesics, with radiant heat or ionization locally and complete rest for a time, may give relief, but in severe neuralgic cases all such methods of treatment are altogether vain. Nothing then suffices except nerve blocking, either by alcohol injection or by resection of the nerve. Section of peripheral branches is doomed to failure, and the only open operation that should be undertaken is resection of the posterior sensory root. Alcohol injection of the peripheral foramina, the infra-orbital or mental, is occasionally successful but often fails to relieve for more than a few days. To make certain of success, the nerve trunks must be injected at their deep foramina of exit from the skull, or else the ganglion itself injected, a much more difficult and delicate proceeding. During the last twenty-three years the author has treated by injection over 1,100 patients with trigeminal neuralgia and is convinced that one should never fail to inject the nerve at the foramen ovale or rotundum and thus relieve the pain for at least a year, and often for much longer. Injections of the ganglion may produce light anesthesia only, or total loss of all sensation. This will not vary after a few days have elapsed since the injection, and in large numbers of his cases he does not doubt that the cure is permanent. Cases in which the neuralgia has returned after injection of a nerve trunk, especially if slight anesthesia persists, are often more difficult to inject than a fresh case and for this reason he advises injection of the ganglion when possible, if the neuralgia returns within eighteen months of the first injection. If repeated injections in the region of the foramen ovale are performed, considerable fibrosis of the tissues in the zygomatic fossa results, with consequent greatly increased difficulty in manipulation of the needle, and ultimately it may even become necessary to resort to surgical operation to resect the posterior root within the cranium.

Skin Eruptions Following Vaccination.—According to Chalke, the majority of postvaccinal rashes are accidental and are caused by the absorption of secondary products from the vaccine pustule, or are allied to serum rashes. Specific eruptions are much less frequent, while generalized vaccinia is extremely rare. Its occurrence is probably always due to auto-inoculation, in which the lesions are those of accidental vaccinia; if there is strict cleanliness it should not occur. Most of the rashes encountered were maculopapular, becoming morbilliform later, while they were often accompanied by urticarial blebs and patches of erythema. The distribution was similar in every case, the rash showing a preference for the limbs, but the face remained relatively free. The rash usually appeared on the eleventh day of vaccination; all the subjects were primarily vaccinated children between 2 and 14 years of age. The evidence as to whether the rash followed the use of a certain batch of lymph was inconclusive. In all cases in which doubt exists as to the true nature of the condition it should be treated as smallpox, and the patient who has recently been successfully vaccinated may safely be sent to the isolation hospital.

1: 625-682 (March 21) 1931

*Treatment of Lobar Pneumonia. L. Dawson.—p. 625.
*Safer Colon Surgery. H. B. Devine.—p. 627.
*Use of Contact Glasses. L. Heine.—p. 631.
Antigenic Properties of Diphtheria Toxoid Antitoxin Floccules. R. Swyer. —p. 632.

Treatment of Lobar Pneumonia.—Before giving Felton's serum, Dawson tests the patient for hypersensitiveness by instilling two drops of undiluted serum into the eye. Within a quarter of an hour the conjunctiva will be injected if the patient is sensitive. A more sensitive intradermal test with 10 per cent of serum in physiologic solution of sodium chloride gives a positive reaction in a susceptible patient. The hypodermic use of epinephrine affords protection in the event of anaphylactic reaction appearing. The results of the use of Felton's serum are encouraging though not yet conclusive. There are grounds for thinking that, besides cutting down the mortality, in types 1 and 2 the prompt use of Felton's serum cuts short the attack. The author suggests that the time has come for a wider trial of Felton's serum, used promptly as soon as pneumonia is diagnosed, without waiting for the typing of the strain. For combating anoxemia, oxygen inhalations are given. For routine treatment the nasal catheter (number 10) is the best and is adaptable under all conditions of hospital and home. By using calibrated reducing valves, the amount of oxygen delivered can be determined and regulated. If 2 liters a minute is delivered through the catheter, the inspired air contains 30 per cent of oxygen and the latter can be raised to 35 per cent. Masks for oxygen administration are impracticable because they distress the patient. The use of the funnel and tube does not give inspired air a higher oxygen value than 22 per cent and is of little use. When the abdomen is distended and the bases of the lungs are apt to lose functional efficiency, the latter can be improved by a brief inhalation of a mixture of oxygen and 5 per cent of carbon dioxide. Elimination should be promoted and it is interesting to note that solution of ammonium acetate and potassium citrate, long established by experience, are being justified by the exacter knowledge of pharmacology. Watching the blood pressure is a helpful guide. If it falls, and especially the diastolic pressure, strychnine is valuable. Digitalis is indicated in cardiac insufficiency and auricular fibrillation. The hesitancy to use opium in pneumonia is fortunately passing, though in some quarters it still lingers. For pain and damping down ineffective cough, it is essential. The cough which derives itself from a pneumonic area can do no good; that area is not functioning and should be kept at rest. The fear that opium in medicinal doses will depress the respiratory center is a bogy. On the other hand, the muscles of respiration become exhausted by their constant use in coughing. The only condition under which opium may require to be withheld or used with great restraint is in a generalized bronchitis with an exudate blocking the tubes. When a patient is just restless and sleepless, an hypnotic is better than opium; often a combination is good. In acute infection, chloral hydrate and bromide still hold an important place. Alcohol has the advantage of being a food that does not require digestion. It lightens worries and helps repose and sleep.

Safer Colon Surgery.—Devine believes that partial colectomy after Paul is much the safest method, but it is encumbered with penalties to the patient. He describes two methods of partial colectomy which, although exacting on the time and ingenuity of the surgeon, enable him to close the fistula early and almost to put it on a basis equivalent to a cecostomy. This abolishes the disabilities to the patient and places the operation on the same plane of safety as gastric or small intestinal operations, extends its use to ileocolectomy, and brings it within the realm of a routine operation for resection of the colon.

Use of Contact Glasses.—Heine states that in removing the glass the physician must not use an ivory spatula or even a finger-nail, as the thin edge, only 0.3 mm., is easily injured. The glass must be put in and out with a small rubber sucker. Sometimes when the patient has worn the glass for several hours it adheres firmly and is difficult to remove. The sucker must then be pressed down firmly on the middle of the cornea so as to drive out as much air as possible, and the patient then moves his eye from left to right. Physiologic solution of sodium chloride is better than sugar solution. If all these points are remembered, failures are rare. There will always be some people whose eyes are so shaped that a spherical glass cannot adhere to them, and there will always be sensitive patients who cannot get accustomed to wearing this uncomfortable fitting on the most delicate surface in the body. All the writers on contact glasses in the past have used a fixed scleral radius of 12 mm., and that is the reason why experiments on this form of correction, which have been made for the last 100 years, have hitherto all failed. It is not the optics of the method that constitute the difficulty but the application of the glass to the cornea, which demands not only correct scleral radius but also a good relation to the optical dimensions. A glass that is relatively flat compared with the natural curve of the cornea must lie lightly on the middle of the cornea, while a glass that is more highly curved than the natural cornea must touch it equally gently around its circumference. Therefore it is of the utmost importance to adapt the glass accurately to the sclera.

South Africa M. Assn. Journal, Cape Town

5: 101-136 (Feb. 28) 1931

Random Reflections on Surgery. W. Welchman.—p. 103.
*Pneumonia in Native Mine Workers of Witwatersrand Goldfields: Bacteriologic and Epidemiologic Study. D. Ordman.—p. 108.

Pneumonia in Native Mine Workers.—The history of lobar pneumonia among the native mine workers of the Witwatersrand gold mines is traced by Ordman from 1907 until the present. A chart is shown illustrating the fall in the mortality rates that occurred in this disease up to 1927 and a slight rise again from that year. It is concluded from clinical, immunologic and bacteriologic evidence that a modified form of the one-time classic lobar pneumonia occurs frequently now. In this type of case there is a varied bacterial flora with or without the pneumococcus, and against this form the polyvalent pneumococcal vaccine is to a large extent ineffective. The seasonal influence on the incidence and mortality rates in pneumonia is discussed. Two peaks of high mortality rates are described, one in the winter and one in the spring. There is evidence that the bacterial flora of the winter pneumonia differs from that in the spring. Differences in the pneumonia mortality rates are shown to occur in the different mining communities in the Witwatersrand area over the same period of time. The continuous change in the strain of the pneumococcus responsible for infection is described. The need for periodically altering the bacterial elements of the prophylactic vaccine against pneumonia, coincident with the discovery of new strains of the pneumococcus or with the isolation of other organisms in the disease, is emphasized. The bacterial flora is different in cases of pneumonia occurring in different parts of the Witwatersrand. A plea is made for the preparation and use of a "community autogenous vaccine" containing the specific micro-organisms recovered from the geographically different communities. The active cooperation of the clinician dealing with cases of lobar pneumonia and the laboratory is shown to be essential in order to obtain an intelligent understanding of the epidemiology of the disease, and so to maintain the prophylactic vaccine at a uniformly high level of usefulness.

Bull. et Mém. de la Soc. Méd. des Hôpitaux de Paris

47: 279-322 (March 2) 1931

Large Dissecting Aortic Aneurysm Simulating Pulmonary Neoplasm. A. Clerc, P. N. Deschamps and R. Schwob.—p. 280.
Amphogyric Sugar Test. M. Labbé.—p. 282.
Diabetes Insipidus, Syphilis and Allassotherapy. Sézary, Lichtwitz and Benoist.—p. 283.
Venous Pulse in Varicose Veins of Lower Limbs. A. Clerc and E. Mourrut.—p. 285.
Chronic Bronchitis Without Cyanosis. A. Clerc and E. Mourrut.—p. 292.
Case of Primary Acute Pericarditis with Marked Effusion of Rheumatismal Origin. P. Brodin and J. Guyot.—p. 299.
Pathogenesis of Insulinic Hydremia. R. Doré.—p. 302.
Case of Human Pasteurellosis. L. Rimbaud, M. Lisbonne and P. Rimbaud.—p. 305.
*Leukocytosis in Roentgenologist. C. Aubertin.—p. 307.
*Treatment of Asthma with General Anesthesia. J. Troisier and Y. Boquien.—p. 310.

Leukocytosis in Roentgenologist.—Aubertin reports the case of a physician who had worked with roentgen rays for more than fifteen years. He suddenly had an attack of extreme fatigue, during which examination of the blood revealed marked leukocytosis (36,800). After he was kept from contact with roentgen rays the leukocytosis began to decrease; the amelioration was extremely slow, however, as it took more than ten months to reach a count of 10,000. The leukocytosis affected both granulocytes and mononuclears and was accompanied by a slight anemia. The spleen and lymph nodes were normal and the only subjective symptoms were extreme fatigue and cephalalgia. About a year later, even though the patient had continued to avoid contact with roentgen rays, leukocystosis (20,000) developed for the second time. This attack was not accompanied by any subjective troubles, not even by fatigue, and disappeared within four months; a slight tendency to mononucleosis persisted, however. Although the report was written too soon after the disappearance of the second attack of leukocytosis to judge of the evolution of the condition, the author does not believe that the leukocytosis was the prelude to a state of leukemia. He feels that the case is worthy of mention, however, because it is a definite example of a hyperleukocytosis of considerable duration caused unmistakably by exposure to roentgen rays.

Treatment of Asthma with General Anesthesia.—Troisier and Boquien report two cases in which they used deep and prolonged general anesthesia in the treatment of asthma. They also report a case in which after an operation under general anesthesia the asthmatic attacks ceased for seven months. They believe that the anesthesia has a therapeutic value in combating asthma by lowering the nervous sensibility of the organism and that the beneficial effects observed after surgical intervention are due in most cases not to the operation but to the anesthesia. The first of the two patients the authors treated in this way was entirely free from attacks of asthma for three months, while in the second case the attacks reappeared after two weeks. This patient, however, had been treated with success with an antasthmatic and was in a perfect state of repose before submitting to the anesthesia, and the authors feel inclined to believe that to secure the best results from the treatment the patient must be in active reaction against the aggressive asthmogenic antigen. The results are as yet inconclusive, to be sure, and the indications cannot be definitely formulated. The authors do not wish to recommend the treatment in mild cases that can be easily relieved by simpler methods, but they feel that general anesthesia is destined to become extremely valuable in refractory and severe cases. They describe the method that they have used.

Bulletins et Mém. de la Soc. Nat. de Chirurgie, Paris

57: 345-396 (March 14) 1931

Surgical Treatment of Exophthalmic Goiter. P. Duval.—p. 346.
Resection of Knee. P. Fredet.—p. 346.
*Undetected Extra-Uterine Pregnancy with Partial Spontaneous Elimination of Fetal Skeleton. F. d'Allaines and R. Doubrère.—p. 347.
*Dislocation of Fourth Cervical Vertebra: Reduction Without Surgical Intervention. H. Oberthur.—p. 353.
Case of Perforation of Gastric Ulcer After Contusion of Abdominal Wall. Magnant.—p. 357.
Surgical Treatment of Exophthalmic Goiter. B. Desplas.—p. 360.
Idem. P. Moulonguet and S. Blondin.—p. 365.
Spinal Anesthesia in Child. I. Balacesco.—p. 370.
Perirenal Hematoma, First Symptom of Renal Tumor. F. d'Allaines and R. A. Marquézy.—p. 374.
Treatment of Surgical Infections, Especially Postoperative Bronchopulmonary Infections with Lytic Vaccines. Lejars, Brocq and Duchon.—p. 380.

Extra-Uterine Pregnancy with Elimination of Fetal Skeleton.—D'Allaines reports and comments on a case of interrupted tubal pregnancy that was observed by Doubrère. The pregnancy was interrupted at the end of the fifth month and remained undetected for a year. Then painful abdominal symptoms and fever developed. A little later part of the fetal skeleton was eliminated through the rectum. The rest of the skeleton was not eliminated spontaneously, however, and signs of irritation of the bladder and general symptoms appeared. Immediate intervention was deemed expedient. A large fetal cyst was revealed, which was fistulized into the sigmoid colon, and an osseous fragment of the skeleton was found in the bladder. D'Allaines points out that cases of this kind, in which the soft portions of the skeleton have been absorbed and the fetus becomes disintegrated, are much more dangerous than those in which the entire skeleton hardens and forms a single foreign body with thick walls. Sometimes the separated parts of the skeleton are all eliminated, usually through the rectum and occasionally through the bladder. When this does not take place in a reasonable length of time, however, the patient should be kept under close observation so that operation may be performed as soon as symptoms of dangerous complications are observed.

Dislocation of Cervical Vertebra.—Oberthur reports a case of dislocation of the fourth cervical vertebra in which, seventeen days after the accident, a perfect reduction was secured by immobilization for seven days in a cast applied with slight traction as in cervical Pott's disease, followed by extension on the head.

Gynécologie et Obstétrique, Paris

23: 97-192 (Feb.) 1931

Functioning of Liver in Human Fetus During Its Development in Utero. R. Noël and H. Pigeaud.—p. 97.
*Neuralgia of Right Phrenic Nerve in Intraperitoneal Hemorrhagic Effusions in Course of Tubal Pregnancy. R. Labry and Z. Rougier.—p. 104.
Foundation of a Mechanical Theory of Eclampsia. R. H. Paramore.—p. 114.
*Gonorrheal Vaginitis. N. Z. Ivanov.—p. 128.
Rôle of Wolffian Body in Formation of Uterus and Vagina. N. Z. Ivanov.—p. 144.

Neuralgia of Phrenic Nerve in Tubal Pregnancy.—Labry and Rougier report four cases of tubal pregnancy in which a severe and profuse intraperitoneal hemorrhagic effusion caused radiation of pain to the cervical and scapular regions. In all four cases the usual signs of pregnancy were lacking and the phrenic neuralgia was the most striking symptom. In one case the presumptive diagnosis was gastric ulcer and in another case the condition of the patient seemed to indicate rheumatism. Surgical intervention revealed the presence of a ruptured tubal pregnancy and a flooding of the peritoneal cavity with blood. The authors explain phrenic neuralgia in tubal pregnancy as follows: The liquid discharged violently into the peritoneal cavity acts as a foreign body, which by an intricate mechanism in which toxic absorption plays an important part irritates the sensory nerve endings of the peritoneum and the fibers of the solar plexus, which is connected with the right phrenic nerve by a complex of anastomoses.

Gonorrheal Vaginitis.—Ivanov challenges the generally accepted theory that acute gonorrheal vaginitis occurs only in children, in women who have passed the menopause, in those with the ovaries removed and so on, and that it is not observed in women with normal menstruation. In biopsic examination of more than 200 cases of acute and chronic gonorrhea, he observed that in practically all the cases the vaginal mucosa presented a marked inflammation and that the presence of gonococci was easily revealed not only in the superficial layers of the mucosa but also deep within the epithelial and subepithelial tissue and the walls of the vagina. Phagocytosis of gonococci was also revealed in the subepithelial connective tissue. The author points out that acute gonorrheal vaginitis is a primary lesion following an infection of the vaginal mucosa produced directly by coitus

and that it does not depend on a discharge from the cervix. The clinical symptoms of acute vaginitis may disappear in a short time although the vaginitis itself persists.

Presse Médicale, Paris

39: 313-336 (March 4) 1931

*Epidemic of Food Poisoning. E. Sacquépée, M. Liégeois and J. Fricker. —p. 313.
Clinical Aspect and Treatment of Chronic Amebiasis. P. Oury and P. Godard.—p. 317.

Epidemic of Food Poisoning.—Sacquépée and collaborators describe an epidemic of food poisoning that occurred after an underofficers' mess in the army. Forty-eight of the fifty-one men who were present had severe gastro-intestinal disturbances from five to thirteen hours after the meal. Only three men were spared: the cook, his assistant and an underofficer who had sore throat and ate only soup and dessert. One patient died on the ninth day. The necropsy revealed submucosal suffusions of blood in the stomach; there was an intense inflammation of the terminal portion of the small intestine and in certain areas a slight hemorrhagic necrosis of the mucosa, evidently the first stage of ulceration. There was a slight hypertrophy of Peyer's patches but no particular change in the mucosa covering them. The heart presented the picture of myocarditis, the spleen was of the infectious type, the liver showed hypertrophy and a slight congestion, and the kidneys revealed punctiform hemorrhages. Microscopically, intense congestion and hemorrhagic necrosis were observed in the liver, the spleen and the kidneys. The meal included lentil soup, potatoes, beef hearts with a sauce, and rice in cream. The meat had been insufficiently cooked; when cut it appeared slightly bloody. Bacteriologic examination of the food gave negative results, except the meat, from which was isolated a motile, gram negative bacterium, which had all the characteristics of *Salmonella*. The same bacterium was isolated from the stools and vomit of the patients and from the organs of the patient who died. It was identified as a typical *Bacterium cholerae-suis*. Inoculation of guinea-pigs and white mice with the bacillus produced symptoms analogous to those observed in the patients. The beef hearts used were from the same slaughter-house and the same tripe market. Investigation revealed that the rest of the meat from the same animals had been untainted. It seemed fairly certain, therefore, that the infection was the result of some accidental contamination in the tripe market, and that the meat had not been cooked long enough to kill the organisms contained in it. The cook and his assistant did not suffer from the intoxication that affected the other men because, before going to the table, they had drunk a considerable quantity of liqueur. It has been previously established that alcohol is capable of destroying or attenuating the toxicity of *Bacterium cholerae-suis*.

39: 353-368 (March 11) 1931

*Important Syndromes of Chronic Articular Rheumatism: Arthritis. F. Coste and J. Lacapère.—p. 353.
Early Mortality in Closed Cranio-Encephalitic Traumatisms. J. Patel and H. Desoille.—p. 356.

Syndromes of Chronic Articular Rheumatism.—Coste and Lacapère classify articular rheumatism in two principal forms: inflammatory arthritis, or simply arthritis, and dystrophic osteo-arthropathies, or arthrosis. Arthritis is often due to the influence of an infectious disease or of a focal infection; the absence of such infection, however, does not preclude the possibility of arthritis. Clinically the symptoms of arthritis are inflammatory in character. Locally the lesions are usually predominantly synovial at first and tend toward a progressive ankylosis of the affected joints. Biologically, examination of the blood usually reveals a more or less marked leukocytosis and an acceleration of the sedimentation rate. The Vernes resorcinol reaction is high and shows various abnormalities; there is usually a distinct parallelism between the apparent intensity of the inflammation and the degree of flocculation. Anatomically the synovial lesions consist of a marked thickening of the membrane and an inflammatory development in its fringes, which are congested, hemorrhagic or necrotic. Hyperemia is present in the early stages. Later obliterative endarteritis develops, ending in fibrosis with multiplication of connective tissue cells and of the synovial cells that edge the fringes of the membrane. The evolution may be serous, adhesive or ankylotic in type. The cartilaginous and osseous modifications develop later than the synovial symptoms. The cartilage is attacked by a gradual invasion by the inflamed synovial tissue and by a granulation that gradually covers the surface and finally penetrates the cartilage itself. Moreover, in the spongy tissue of the epiphysis the amount of connective tissue of the marrow is increased; osteoblasts attack the osseous trabeculae and absorb them, enlarging the cavities of the spongy tissue. The cartilage is then invaded on its inner surface by the diseased connective tissue in the same way as on its outer surface until necrosis of the cartilage is effected, leaving ulcerations. The bared bone adjoining it undergoes eburnation. In the class of arthritides the authors include all cases of infectious rheumatism of established etiology, which are unfortunately rare. Among the many cases in which the origin is undetermined they feel that the inflammatory nature of progressive deforming arthritis is sufficiently clear to permit of this classification. They also include certain other cryptogenic arthrosynovitides, as rhizomelic spondylosis, in which inflammatory symptoms are clearly distinguishable.

Schweizerische medizinische Wochenschrift, Basel

61: 217-240 (March 7) 1931

Psychopathic Personalities. M. Tramer.—p. 217.
Necessity of Standardization of Pharmaceutic Preparations. K. Muley. —p. 220.
Influence of Increased Lipase on Tuberculous Process. E. Fürth.—p. 222.
*Serious Poisoning with Carbon Tetrachloride. A. Henggeler.—p. 223.
Remarkable Improvement in a Case of Pulmonary Tuberculosis. T. Stephani.—p. 225.
Therapy of Angiospasms. R. F. von Fischer.—p. 225.

Poisoning with Carbon Tetrachloride.—Henggeler reports the case of a school janitor, aged 54, who developed poisoning while polishing floors with a floor wax, which was heated in a hot water bath before application. Inhalation of the concentrated vapors caused a serious intoxication, and chemical analysis of the floor wax indicated that the poisoning was caused by carbon tetrachloride. The patient had continued hiccups and attacks of vomiting. In the course of twenty-two days he lost 17.5 Kg. (39 pounds). Signs of collapse appeared and death seemed imminent, but the collapse was overcome by the use of a cardiac stimulant and the patient gradually improved. At first he still complained of occasional attacks of piercing pains in the arms and legs and of sounds in the ears, but finally these also disappeared, and now the patient is again able to follow his occupation. The author criticizes the manufacturers of the floor polish for not giving proper directions for the use of their product so as to prevent poisoning.

Clinica Pediatrica, Modena

13: 89-176 (Feb.) 1931

Echinococcus of Lung in Children. G. Vitetti.—p. 89.
*Behavior of Leukocytes in Typhoid in Children. A. Lucca and G. Minciotti.—p. 120.
Angioneurotic Manifestations and Schönlein-Henoch's Disease. G. Gelli and C. Malossi.—p. 149.

Leukocytes in Typhoid.—In sixteen children, aged from 5 to 12 years, with typhoid (positive Widal test) arising from a single source of contagion, Lucca and Minciotti studied the behavior of the leukocytes from the first days of the disease by examination every third day. In no case did they observe leukocytosis; in five mild cases the number of leukocytes remained normal throughout the disease. In the other cases they noted a moderate leukopenia from the middle of the second to the middle of the fourth week without direct relation, however, to the height and to the duration of the fever. After an increase in the number of leukocytes during convalescence, they again tend to decrease. Frequent but not grave complications do not modify the total quantity of leukocytes, which, however, increased appreciably but only temporarily following injections of milk. The leukocyte formulas taken simultaneously revealed a neutropenia that began toward the end of the third week and continued up to convalescence. The lymphocytes behaved in a manner just opposite to the granulocytes. There was always a lack of eosinophils during the first weeks. In conclusion, they regard leukopenia in typhoid of uncertain diagnostic value in childhood; more constant but a late manifestation is neutropenia; the most characteristic, however, is the absence of eosinophils.

Giornale di Clinica Medica, Parma

12: 85-155 (Feb. 10) 1931

Hemoglobinuria. A. Conti.—p. 88.
Hemolytic Icterus. S. Battaglini and B. Blasi.—p. 109.
*Skin Reaction to Tuberculin, Vaccination Against Smallpox and Schick and Dick Tests in Exanthematic Diseases. A. Marotti.—p. 124.

Skin Reaction to Tuberculin and Schick and Dick Tests in the Exanthems.—Marotti has observed that during the exanthem of measles and of scarlet fever, solely as a result of anergy resulting from changed local conditions, the skin reaction to tuberculin is absent, whereas the Schick skin test is positive in a greater percentage of cases than in well persons. He connects this fact with the greater receptivity toward diphtheria of persons with scarlet fever and measles, in which diseases the evolution of smallpox vaccination is, however, unchanged. He observed, on the other hand, that the Dick skin test is not influenced by measles. He found also that the tuberculin test, smallpox vaccination and the Schick and the Dick skin tests are not influenced by chickenpox.

Pediatria, Naples

39: 233-288 (March 1) 1931

*Meningococcic Meningitis in Nurslings. V. Cantalamessa.—p. 233.
*Fifth Disease (Epidemic Erythema Infectiosum). A. Pinelli.—p. 248.
Fröhlich's Syndrome in Child: Case. M. Cotellessa.—p. 256.
*Primary Gonorrheal Arthritis of Several Joints in the New-Born. R. Canino.—p. 264.

Meningococcic Meningitis in Nurslings.—Cantalamessa made observations on meningococcic meningitis in forty-two infants aged from 1 to 12 months. The disease had an acute or subacute evolution in thirty-three of the infants, a hyperacute evolution in four, a protracted cachectic evolution in three, and two of the infants had fatal recurrences. All patients but two received specific serotherapy. The serum was injected intraspinally and in ten cases an injection was given into the ventricles as well. Besides serotherapy, fourteen of the infants received vaccinotherapy (nine of them were given autovaccine). Incomplete forms of meningococcic meningitis are rare in nurslings. The clinical picture of the several forms of meningococcic meningitis is described. A sudden and stormy onset of the disease, such as that observed in older children or in adults, is a frequent observation in nurslings (50 per cent in the author's cases). It indicates the presence of grave forms of the disease, which as a rule have a rapid and fatal evolution in spite of early treatment. On the contrary, cases of long standing which begin with intermittent fever are benign forms of the disease in spite of the late administration of specific treatment caused by the difficulties of making an early diagnosis. A moderate enlargement of the spleen is a frequent observation early in the disease. The symptom may be useful in an early diagnosis. Specific intraventricular serotherapy in association with specific intraspinal serotherapy as early as possible, before the blocking of the ventricles has taken place, is considered of value especially on the theoretical grounds that the primary seat of localization of the meningococcal septicemia is in the ventricles and in the choroid plexus.

Epidemic Erythema Infectiosum.—Pinelli reports ten cases of epidemic erythema infectiosum (the so-called fifth disease), a contagious, autochthonous and specific infection which attacks children, mostly between 3 and 8 years. Nurslings are not attacked even though they may continue to live with the infected children. The contagion takes place by the transmission of the virus through direct contact of infected children with normal children. The clinical picture of the disease in its several stages (incubation, appearance, generalization and disappearance of the exanthem) is described. During the stage of generalization the skin seems as if infiltrated, and in grave forms it has an erysipelatous appearance. During the presence of the disease, changes in the hematologic picture are observed. The cutaneous exanthem is neither preceded nor associated with severe general phenomena. It presents special characteristics which differentiate it from any other form of exanthem. When the exanthem disappears, no desquamation takes place. The prognosis of the disease is good. All patients observed by the author recovered without any complications or sequelae and without having received any special treatment.

Primary Gonorrheal Arthritis in the New-Born.—Canino reports a case of primary gonorrheal arthritis of several joints in a new-born infant. The child's mother had gonorrhea and a negative Wassermann reaction. The author calls attention to the similarity of the clinical picture of gonorrheal arthritis of the joints with Parrot's pseudoparalysis. The differential diagnosis should be made by the careful bacteriologic examination of the exudates of the joints and by laboratory observations. The author's patient was given gonococcus vaccines with good results. After the vaccines had been discontinued for about a week, a coryza of moderate intensity appeared. The nasal secretions at that time proved to be positive for gonococcus. The patient was given 10 cc. of antigonococcus serum in injections for three consecutive days, with good results. The author (on the basis of the fact that in his case the nasal mucosa was the portal of entry of the gonorrheal infection, as well as the frequent observation of coryza of a gonorrheal origin in the new-born) proposes as a prophylactic against gonorrheal infections the intranasal instillation of mild silver preparations in all new-born infants whose mothers have shown unmistakable symptoms of gonorrhea.

Policlinico, Rome

38: 255-290 (Feb. 23) 1931. Practical Section

Pathogenicity of Balantidium Coli. G. Penso.—p. 255.
*Hepatic Cirrhosis, Tumefactions of Male Mammary Glands, and Testicular Atrophy. L. d'Antona.—p. 261.

Hepatic Cirrhosis, Tumefactions of Male Mammary Glands, and Testicular Atrophy.—D'Antona describes two cases of revivescence of the male mammary glands associated with hepatic cirrhosis and marked testicular atrophy. He thinks that to the testicular atrophy may be ascribed considerable though not exclusive importance in the genesis of the syndrome, in the appearance of which, in addition to a pluriglandular dysfunctioning, the individual constitution played a part.

Rivista di Clinica Medica, Florence

31: 1177-1220 (Nov. 30) 1930

*Absence of Choked Disk in Cerebral Tumors and Relation Between Choked Disk and Roentgen Manifestations of Intracranial Hypertension. C. Pegoraro.—p. 1177.
Diagnosis of Typhobacillosis. C. Starnotti.—p. 1195.

Absence of Choked Disk in Cerebral Tumors.—In a series of eighty-two cases of cerebral tumor, Pegoraro studied the frequency of choked disk and the roentgen manifestations of intracranial hypertension. From the ophthalmoscopic observations, he found that choked disk was absent in 20 per cent of the cases. The absence of this symptom was not found to be absolutely dependent on the volume or the nature of the tumor. He observed, however, a certain relation to the site of the tumor. He found choked disk frequent in tumors of the occipital, parietal and temporal lobes, of the semioval center, of the anterior cerebral fossa, of the cerebellum and of the hypophysis but rare in tumors of Rolando's zone and of the hypophyseal infundibular region. The roentgen observations were less frequent than the ophthalmoscopic. This depended also, to some extent, on the site of the tumor but not on its volume and nature. The ophthalmoscopic and the roentgen manifestations of intracranial hypertension in the observed cases were not always associated.

Rivista di Clinica Pediatrica, Florence

29: 89-176 (Feb.) 1931

Problem of Erythema Nodosum. P. Fornara.—p. 89.
*Influence of Ultraviolet Rays on Elimination of Uric Acid. A. Cabitto.—p. 106.
Dry Gangrene of Right Forearm in Infant Ten Days Old. A. Grassi.—p. 120.
Changes in Glycemic Curve Resulting from Use of Irradiated Hydrocarbon Substances. P. Gorini.—p. 138.

Influence of Ultraviolet Rays on Elimination of Uric Acid.—Cabitto concludes: In a child on a purine diet the application of ultraviolet rays does not cause notable changes in the urinary elimination of uric acid. In children on a nonpurine diet and given treatment with small doses of ultraviolet rays applied to the whole surface of the body, the elimination of urinary uric acid increases notably after each application, the increase remaining evident for several days. In the twenty-four

hours immediately following the application, there is sometimes a moderate lowering of the value of the urinary uric acid, which changes rapidly during the succeeding twenty-four hours, reaching values sometimes double the normal value. The elimination curve of the urinary phosphates follows precisely the elimination curve of the uric acid. Since the uric acid is the expression of nuclear metabolic activity, the increase in the elimination of uric acid observed by the author in all cases studied is doubtless ascribable to an action of ultraviolet rays on the nucleus. The author assumes that this increase is to be attributed to an excitation of the nuclear metabolic activity and not to a destruction of nuclei.

Semana Médica, Buenos Aires

38: 537-600 (Feb. 26) 1931

Pyolabyrinthitis with Grave Meningeal Reaction. H. Zubizarreta.—p. 541.
Silent Abscesses in Diabetic Patients. M. I. Pantolini and R. Vacarezza.—p. 543.
Echinococcosis of Pelvis and Abdomen: Case. A. J. Pavlovsky and E. L. Ottolenghi.—p. 546.
*Fatal Toxicosis in Pregnancy with Syndrome of Acquired Hemolytic Anemia, Chronic Nephropathy and Malignant Hypertension. R. Dassen.—p. 550.
Fistula in Neck Maintained by Inflammation of Boyer's Bursa. M. Cieza Rodriguez.—p. 552.
Value of Capillaroscopy as Method of Examination of Sympathetic Nervous System. A. M. Travi.—p. 554.
Diphtheritic Myocarditis: Arrhythmia: Auricular Dissociation with Ventricular Block. I. Natin.—p. 562.
Pyelography After Intravenous Injection of Iopax. J. Salleras.—p. 570.
Importance of Early Surgical Treatment in Cancer. R. V. Hernández.—p. 571.
Infected Diverticulum of Bladder: Case. C. V. Zerbini.—p. 580.
Uremia as Complication of Pulmonary Tuberculosis Associated with Diphtheria. J. R. Blanco Vitorero.—p. 582.

Toxicosis in Pregnancy: Syndrome.—Dassen's patient, aged 35, had normal blood pressure during the first months of pregnancy. Near the end of pregnancy she simultaneously developed a syndrome of acquired hemolytic anemia, gravidic nephrosis and malignant hypertension (changes of the blood picture, enlargement of the liver and of the spleen, and renal and circulatory disturbances). Before delivery she had a typical attack of eclampsia. After delivery of a dead fetus the disease of the kidney improved slightly and entered into a chronic period. The hypertension, on the contrary, acquired a malignant nature and the patient finally died from cardiac insufficiency, nine months after delivery. The author deals with the differential diagnosis of the syndrome. The condition of the patient was that of chronic nephrosis, well differentiated from nephritis with hypertension and secondary anemia because the patient did not have azotemia. Gravidic nephropathy is considered as a clinical entity and cases of it are frequently reported. Reports of acquired hemolytic anemia are less frequently found in the literature. The association of chronic nephropathy and acquired hemolytic anemia with malignant hypertension as in the author's case is rare. The author says that pregnancy sometimes causes a degenerative nephrosis associated with glomerular changes in previously normal kidneys (the so-called glomerulonephritis of pregnancy).

Deutsche medizinische Wochenschrift, Berlin

57: 349-392 (Feb. 27) 1931

Vitamin Content of Mushrooms. A. Scheunert and J. Reschke.—p. 349.
*Experiences with Roentgen Irradiation in Hypertrophy of Prostate. H. Boit.—p. 351.
Differential Diagnosis of Occupational Eczemas. M. Michael and C. Radeff.—p. 353.
*Withdrawal of Morphine in Twilight Sleep. E. Speer.—p. 355.
Intravenous Administration of Bromine. R. von den Velden.—p. 359.
Experiences with Simplified Müller's Conglobation Reaction. H. Kreuzer.—p. 360.
Transposition of Head's Zones and of Boas's Point of Pressure in Cholecystopathy. M. Stern.—p. 361.
Binaural Auscultation. F. Simon.—p. 362.
Necessity of Wound Excision in Tetanus. M. Landsberg.—p. 363.
Simultaneous Roentgen Visualization of Gallbladder and of Urinary Organs. B. V. Fuentes and P. Rubino.—p. 364.
Therapeutic Value of Mixture of Insulin and Sodium Desoxycholate. E. Steinitz and E. Thau.—p. 365.
Improved Cervical Dilators. H. Finck.—p. 365.

Roentgen Irradiation in Hypertrophy of Prostate.—Boit employed roentgen irradiation in 114 cases. Before each irradiation the bladder is evacuated and this is followed by irrigation of the bladder and of the intestine and by intravenous injection of 10 cc. of a 50 per cent solution of dextrose. The rays are applied with a tube of 6 by 8 cm. on three fields on successive days. The first field is irradiated from the perineum, while the patient is in the dorsal position, the second infracoccygeally between the tip of the coccyx and the anus, the third suprasymphyseally. On each field 80 per cent of the unit skin dose is applied. The filter consists of 0.5 mm. of zinc and 1 mm. of aluminum, and each irradiation lasts nine minutes. The testes are covered. During the irradiation of the first and third fields the focus distance is 30 cm.; during the infracoccygeal irradiation, the tube is pressed between the nates. If necessary, a second series of irradiations is applied after four weeks. On the basis of his experiences the author reaches the conclusion that this form of roentgen treatment is the method of choice in all inoperable cases of adenoma of the prostate. Roentgen irradiation gives favorable results also in the first stage of adenomas of the prostate and also in acute retention. More than four or five roentgen series are not advisable because a stenosing fibrosis might develop.

Withdrawal of Morphine in Twilight Sleep.—Speer induces twilight sleep, in order to overcome the abstinence manifestations. He employs phenobarbital and scopolamine, and in recent years he has added a solution of secondary butylbrompropenylbarbituric acid in order to deepen the sleep without having to fear phenobarbital intoxication. Altogether the twilight sleep never lasts more than five days, in milder cases only three days. The first injection of 0.4 Gm. of phenobarbital and of 0.001 Gm. of scopolamine is given in the evening. The twilight sleep does not interfere with the proper feeding of the patient. The noon meal can be served before the midday injection and the evening meal before the injection at night. After twilight sleep the patients do not remember past pains or discomforts, but they are at first dizzy and sensitive to light. At this time the patients should be treated with especial kindness and consideration so as to gain their confidence, on which largely depends the success of the psychotherapy, which is the second and most important part in the treatment of morphine addicts. Medicaments should not be given, but bodily exercises are of great help after withdrawal. Care should be taken that the patients gain in weight. During the second week sunbaths and swimming are advisable or, if the season does not permit this, the patients are given daily quartz lamp irradiations.

Klinische Wochenschrift, Berlin

10: 385-432 (Feb. 28) 1931

Newer Results of Glaucoma Research. A. Peters.—p. 385.
*Insulin Reaction on Leukocytes of Blood. W. Stockinger and K. Kober.—p. 389.
Influence of Bodily Exertion on Electrical Potential of Skin. P. Keller.—p. 392.
Significance of Bacillus Hepatodystrophicans (Kuczynski) for Etiology of Yellow Fever. P. Manteufel and K. Herzberg.—p. 395.
*Relations Between Cancer and Lipoid Metabolism. F. Burgheim and W. Joel.—p. 397.
Demonstration of Specific Antibodies in Metasyphilis, a Foundation for New Methods in Therapy of Late Syphilis. J. Steinfeld.—p. 398.
Testing Evacuation of Stomach by Means of Dextrose. F. Detering.—p. 402.
Treatment of Lymphogranuloma Inguinalis Especially by Means of Copper Preparations. W. Frei and J. Wiese.—p. 404.
Method of Testing Motor Disturbances of Velum Palatinum. B. Freystadtl.—p. 406.
Insulin Action Potentiated by Simultaneous Administration of Lipoid Preparation. E. Vogt.—p. 407.
Ten Years of Friedmann Tuberculosis Remedy. F. F. Friedmann.—p. 407.

Insulin Reaction on Leukocytes of Blood.—Stockinger and Kober report experimental investigations on special morphologic changes of leukocytes of blood under the influence of insulin. That the fluctuations in the leukocytes, which they observed, were really the result of the insulin injection cannot be doubted, since the injection of other substances or hormones had a different influence on the blood picture. The characteristic effect of the insulin injection is an absolute increase in lymphocytes during the second hour following the injection. This increase reaches the maximum toward the end of that hour and then spontaneously returns to normal. Simultaneously with the increase in the lymphocytes, but at first progressing somewhat more slowly, there develops a neutrophilic leukocytosis

caused by the appearance of a new generation of cells. In some of the cases a decrease in the neutrophils, which is due to the disappearance of old cells, precedes the increase. A connection between the changes in the blood picture and the hypoglycemia cannot be demonstrated.

Relations Between Cancer and Lipoid Metabolism.—Burgheim and Joel report the results of quantitative, histochemical determinations of the cholesterol content of malignant and benign tumors. The authors noted a marked difference in the staining of the malignant growths compared to that of the benign tumors. Cancerous growths generally showed bluish green stains, whereas these dye particles were almost never noted in noncancerous growths. These observations make it appear reasonable to attempt histologic diagnosis of cancer by means of a dye reaction. Quantitatively the cholesterol content of malignant tumors is always higher than that of nonmalignant growths. However, cholesterol is not entirely absent in the nonmalignant growths, as could have been assumed on the basis of the negative dye reaction. This indicates that there are not only quantitative but also qualitative differences in the cholesterol content of the two types of tumors. The authors also found that the tissues surrounding a primary malignant growth or a metastasis, although they appear normal, often have a high cholesterol content, and since it has been demonstrated that cholesterol has an important rôle in the pathogenesis of malignant growths, this increased cholesterol content should be given especial attention. It is probable that the high cholesterol content favors the spreading of the growth.

Medizinische Klinik, Berlin

27: 269-306 (Feb. 20) 1931

Newer Results of Diagnosis and Therapy of Diseases of Stomach. N. Henning.—p. 269.
Lessons to Be Learned from Tuberculous Fatalities in Lübeck. F. von Gutfeld.—p. 273.
*Syphilis of Stomach. H. Strauss.—p. 275.
Symptomatic Treatment of Pathologic Somnolence, Particularly of Narcolepsy. O. Janota.—p. 278.
Toxic Action of Fool's Parsley (Aethusa Cynapium). L. Seltmann. —p. 281.
Sequelae of Dysentery in War Veterans. H. Scheidel.—p. 281. C'td.
Cerebellar Pseudotumor. Brückner.—p. 283.
Streak Shaped Inhibition of Growth of Hair. M. von Lemešić.—p. 284.
Experiences with Guttadiaphot Method. A. Wilke.—p. 285.
Micromethod of Meinicke Clarification Reaction in Cerebrospinal Fluid. C. Riebeling.—p. 286.

Syphilis of Stomach.—Strauss reports the clinical history of a man, aged 50, who twenty years previously had had syphilis. Besides a chronic nephrosis, there existed changes in the pupils and abnormal patellar reflexes that are characteristic for late syphilis. Anacidity resistant to histamine and chronic gastritis were found to be the causes of the gastric complaints. Roentgenoscopy revealed in the prepyloric region a narrowing of the lumen with deformation of the wall. The motility of the wall was inhibited at first. The feces had never contained blood. A systematic treatment with an arsphenamine preparation and other antisyphilitic agents had the effect that the gastric disturbances gradually disappeared and the roentgenogram revealed a better dilatability of the antropyloric canal. The nephrosis and the nervous symptoms were not influenced by the antisyphilitic therapy. The author further directs attention to his former publications on syphilis of the stomach and also reviews the reports of other authorities. He states that although syphilis of the stomach is comparatively rare, it is nevertheless more frequent than it is recognized, for it is easily mistaken for cancer of the stomach. In cases in which a differentiation between cancer and syphilis is difficult, it is generally advisable to resort to laparotomy, because if cancer exists valuable time is not lost. Syphilis of the stomach is most effectively counteracted by antisyphilitic treatment. However, it should be resorted to only if there is definite evidence that cancer is not present.

27: 307-342 (Feb. 27) 1931

Relations Between Etiology and Clinical Aspects in Various Forms of Paratyphoid. G. Elkeles.—p. 307.
Diathermy in Dentistry. H. J. Mamlok.—p. 311.
Duration of Protection Against Smallpox (Skin Immunity) in Intracutaneous Vaccination. O. Kirsch.—p. 313.
Eau de Cologne-Melanoderma. O. Richter.—p. 315.
Pylorus in Gastroscopy. R. Korbsch.—p. 319.
*Renal Disorders During Bismuth Therapy in Syphilis. M. Taralrud. —p. 320.
Sequelae of Dysentery in War Veterans. H. Scheidel.—p. 322. C'cn.

Renal Disorders During Bismuth Therapy in Syphilis.—Among 484 syphilitic patients who were given bismuth therapy, Taralrud noted stomatitis in only nine cases and in all these patients the mouth hygiene was unsatisfactory. However, renal disorders developed in 57 per cent of the patients. The author concludes that, by correct dosage and by good care, inflammation of the oral mucous membrane can be prevented. More consideration should be given to the toxic disorders of the kidneys, which develop in the course of bismuth therapy and are generally of the type of tubular nephropathy. Their prognosis is generally favorable, especially if control tests of the urine are made regularly, and if the bismuth cure is interrupted as soon as pathologic signs appear. However, it was also found that when the bismuth therapy was resumed the renal disorder recurred. This contradicts Heimann-Trosien's statement that the kidneys become accustomed to bismuth. The author advises that before each bismuth injection the mouth of the patient should be carefully inspected and albumin and sediment controls of the urine should be made. If bismuth therapy is discontinued on appearance of the first pathologic signs, stomatitis as well as serious renal disorders can be avoided.

Münchener medizinische Wochenschrift, Munich

78: 303-342 (Feb. 20) 1931

*Simplified Treatment of Empyema in Children. C. Noeggerath.—p. 303.
Prophylaxis of Infection in Obstetrics and in Surgery. L. Veilchenblau. —p. 306.
*Ischuria Paradoxa. F. Fuchs.—p. 307.
Pathogenesis and Therapy of Pulmonary Tuberculosis. L. Hantschmann. —p. 307.
Determination and Significance of Pressure of Cerebrospinal Fluid. W. Baumann.—p. 311.
Action of Cutaneous Stimulants and of Massage. F. Hoff.—p. 314.
New Methods in Treatment of Septic Processes. A. Alke.—p. 320.
Therapy of Erythema Exudativum Multiforme. Görl and Voigt. —p. 320.

Simplified Treatment of Empyema in Children.—Because in resection of ribs the prognosis is comparatively unfavorable, and because pleural puncture, whether done only once or if repeated, brings unsatisfactory results, especially in young children, Noeggerath returned to the older method. An intercostal pleurotomy is performed with the knife. Drainage is effected by means of a rubber drain. Simple suction is done by a double bandage with plenty of bandage material which can easily be replaced. Besides its simplicity the method has three advantages: 1. For the patient it is advantageous because the child bears this slight intervention much better than repeated punctures and it is not inconvenienced by the tubes of the ordinary suction method. 2. The nursing is simpler because there are no long tubes which might be bent or torn out. 3. The physician, especially the general practitioner, values the method because it is simple and does not require a special instrument. In comparison to other methods the therapeutic results of the pleurotomy with subsequent drainage are favorable, especially in young children aged less than 2 or 3 years. The author suggests that this treatment of empyema might also be tried in adults.

Ischuria Paradoxa.—Fuchs reports the case of a man, aged 66, who for two years had difficulties in voiding urine and during the last two weeks voluntary evacuation had been impossible, but the urine was constantly dribbling. The prostate was enlarged and the bladder extended to the umbilicus. The patient was always thirsty but had no appetite and had occasional attacks of vomiting. The case was diagnosed as hypertrophy of the prostate with distention of the bladder and with ischuria paradoxa. The first therapeutic measure was the gradual evacuation of the bladder. In the course of ten days this was accomplished. After the complete evacuation on the tenth day, 100 cc. of a 1 : 5,000 solution of mercuric oxycyanide was injected into the bladder. During all these days the patient was kept at bed rest and the dribbling of the urine continued, but the thirst decreased. The days immediately following the injection, catheterization was done only once. After that, however, it was done twice daily. Regular elimination of the

urine had the effect that the involuntary discharge ceased. The patient's appetite and his condition improved. The detrusor gradually regained the normal functioning, and voluntary evacuation of the bladder was possible several times a day. Catheterization was gradually discontinued. During the last four weeks, catheterization has not been necessary and the bladder functions almost normally. In the conclusion the author points out that by proper therapeutic measures the third stage of hypertrophy of the prostate may be reversed to the first stage, in which many patients can live without discomfort for many years, but it is necessary to advise the patients to return for control examinations at regular intervals.

Wiener klinische Wochenschrift, Vienna

44: 309-340 (March 6) 1931

*Iodine Injuries of Thyroid in Population of Vienna. W. Raab.—p. 309.
*Alleged Injuries of Thyroid from Iodized Salt. Wagner-Jauregg.—p. 317.
Microbiologic Experiments as Foundations of Researches on Vitamins. W. Kollath.—p. 320. C'cn.
Interruption of Pregnancy on Account of Pulmonary Tuberculosis. L. Petschacher.—p. 323.
Present Status of Indications for Operative Treatment of Senile Cataract. K. Safar.—p. 324.

Iodine Injuries of Thyroid in Population of Vienna.—Raab asserts that in the course of three and one-half months 100 women with hyperthyroidism were examined at the university clinic. This number, which was equal to 5.2 per cent of all women examined, shows the great incidence of hyperthyroidism in Vienna. In thirty-seven cases it was found that the administration of iodine had either caused or exacerbated the hyperthyroidism. That the widespread and uncontrolled use of iodized salt may also lead to hyperthyroidism was proved by the fact that in forty-four of the cases the anamnesis revealed the use of iodized salt. In regard to goiter prophylaxis by means of iodized salt it is stated that neither its harmfulness nor its harmlessness has been established beyond a doubt.

Alleged Injuries of Thyroid from Iodized Salt.—Wagner-Jauregg criticizes Raab's standpoint in regard to the use of iodized salt. He points out that Raab has not been able to prove that the use of iodized salt alone has caused hyperthyroidism. On the other hand, the positive results of prophylaxis by means of iodized salt cannot be denied. He thinks that Raab's demand for an individualized goiter prophylaxis defeats the principle of the iodized salt prophylaxis. He shows that goiter prophylaxis in the schools is not entirely satisfactory, for if there is no prophylaxis by means of iodized salt a large percentage of the children already have goiter, when they enter school, and the iodine medication in the schools does not completely counteract goiter, after it has once developed.

Zentralblatt für Chirurgie, Leipzig

58: 385-448 (Feb. 14) 1931

Use of Paraffin-Benzine for Cystoscopic Examination. R. Sommer.—p. 386.
*Ligation of Veins for Treatment of Pyemia. H. Zielke.—p. 390.
Surgical Interventions for Pain Therapy. E. Heymann.—p. 395.
*Ileus Caused by Endometrioid Proliferation of Intestine. B. Schuler.—p. 399.
Clinical Signs Accompanying Changes in Spinal Column. M. Böhm.—p. 401.
Methods for Treatment of Perforating Gastroduodenal Ulcer. V. Schaefer.—p. 405.
Pseudomyxoma Derived from Appendix. F. J. Irsigler.—p. 408.
Pseudomyxoma Developing from Appendicitis. F. Schewket.—p. 413.
Plaster-of-Paris Dressing Applied in Fractures of Humerus. R. Sommer.—p. 415.

Pyemia Treated by Ligation of Veins.—One of Zielke's cases was puerperal pyemia and the other was pyemia of the leg. The first patient developed chills seven days after a forceps delivery. The clinical signs were typical for pyemia; staphylococci were found in the blood cultures. There were no metastases. Through a lateral incision made on the right side, the vena cava was ligated extraperitoneally in two places; the distance between the two ligatures was 2 cm. Besides, two small veins running along the peritoneum (ovarian vein) and another along the psoas muscle were ligated. Through a lateral incision made on the left side, the thrombosed ovarian vein was ligated; moreover, two ligatures were applied to the left common iliac vein. The operation was completed in forty-five minutes. The chills and fever rapidly disappeared afterward and the blood picture gradually became normal. The patient was discharged in good condition ten weeks after the intervention. The other patient was a man, aged 42. The disease started with chills accompanying a recurring erysipelas on the left leg; lymphangitis and thrombophlebitis followed. On admission, besides lymphangitis and thrombophlebitis an abscess was found in the left knee joint. Intravenous injections of dextrose, baths, packs, repeated incisions and blood transfusion remained without effect. Metastases were absent. Through a lumbar incision made on the left side, the external iliac vein was ligated with number 4 catgut extraperitoneally in two places, separated by 2 cm. The operation was performed in fifteen minutes; the wound healed by primary union. The chills subsided immediately, while fever persisted for three weeks. On account of a considerable swelling of the left leg and a complicating thrombosis of the right leg, the patient was not discharged for several months. Because the general condition is good, the author assumes that the patient may recover completely except for stiffness in the left knee joint. He points out that, in cases similar to the first, ligation of the ovarian and hypogastric veins may suffice, if the disease is recent.

Ileus Occasioned by Endometrioid Proliferation of Intestinal Wall.—Schuler's patient, a woman, aged 48, had suffered with abdominal pains and persistent vomiting for three days. High enemas and purgatives did not bring about expulsion of gas or of stools. On examination, abdominal tension and meteorism were present. The diagnosis of ileus was suggested. Repeated high enemas, proctoclysis with sodium chloride solution, and sedatives resulted in expulsion of gas and the disappearance of vomiting. Roentgenograms indicated the presence of a stenosis at the point of passage of the sigmoid flexure into the rectum. The improvement proved to be transient and therefore an operation was decided on. A hard tumor measuring 4 by 5 cm. was found in the region of the sigmoid flexure. Liquid contents and gas were expelled from an appendicular fistula that was made. The following days, stools and gas were expelled through the anus; the fistula was then used for injections of sodium chloride solution. On proctoscopic inspection, pathologic changes were not found as high as 23 cm. A benzidine test of the stools was positive. A carcinoma was suspected. The tumor was removed; on microscopic examination the latter proved to be an endometrioid proliferation of the intestinal wall. The patient's history revealed that the first attack of cramps had developed two days after the menses. It had been accompanied by vomiting and had persisted for a whole night. During the last four years intense cramps had regularly preceded by five or six days and had followed by two or three days each menstrual period. They disappeared during the menses; the latter were accompanied by an obstinate constipation lasting from six to eight days. The cramplike pains were always located in the rectal region. The present disease started two days after the last menses. The postoperative course was without any complication; menstruation became normal.

Zentralblatt für Gynäkologie, Leipzig

55: 385-448 (Feb. 14) 1931

Prophylaxis of Congenital Syphilis. E. Klaften.—p. 385.
Subcutaneous Oxygen Therapy. A. Melchior.—p. 403.
Influence of Hormone of Anterior Lobe of Hypophysis on Male Gonad. H. O. Neumann.—p. 407.
Hormonal Therapy in Menstrual Anomalies. R. Köhler.—p. 415.
*Changes in Epithelium of Cervix Uteri During Pregnancy and Their Significance in Etiology of Carcinoma of Uterus. J. Hofbauer.—p. 423.
Spinal Anesthesia in Cesarean Section. K. Klaus.—p. 435.
Hysterectomy of Gravid Uterus During Labor with Subsequent Delivery of Child. A. Nemes.—p. 439.
Treatment of Nongonorrheal Forms of Leukorrhea by Means of Vaginal Tampon Saturated with Calcium Gluconate. M. Rodecurt.—p. 440.

Changes in Epithelium of Cervix Uteri During Pregnancy.—Hofbauer describes metaplastic changes of the cell character and also displacements of the epithelium-connective tissue line in the cervix uteri which he observed during pregnancy. He assumes that such changes might be of etiologic significance for the development of malignant growths. Further he directs attention to the growth promoting significance of the anterior lobe of the hypophysis and states that he

obtained favorable therapeutic results when he preceded the radium treatment of the carcinoma of the cervix uteri by irradiation of the hypophysis.

55: 449-512 (Feb. 21) 1931

Diagnosis of Pregnancy Before Aschheim. H. Sellheim.—p. 450.
*Experiences with Manoiloff's Pregnancy Reaction. F. Gymnich.—p. 458.
Physiology and Pathology of Sex Hormones, Particularly of Hormone of Corpus Luteum. C. Clauberg.—p. 459.
Demonstration of Solution of Secondary Butylbrompropenylbarbituric Acid in Maternal Body and in Placenta. K. Jaroschka.—p. 470.
Hormonal Sterilization. L. Horneffer and K. Meyerhoff.—p. 473.
*Cure of Gonorrheal Endometritis by Means of Curettage. E. J. Orsós. —p. 476.
Rupture of Echinococcus Cyst of Liver Simulating Torsion Cyst. D. Maluschew.—p. 482.

Experiences with Manoiloff's Pregnancy Reaction.—Cymnich tested the reliability of Manoiloff's pregnancy reaction in 105 cases. He found that during the early months of pregnancy Manoiloff's reaction failed in 39 per cent of the cases. During the later months of pregnancy it confirmed the diagnosis, which was made on the basis of other modes of examination, in 94 per cent of the cases. But since a pregnancy reaction is of special value during the earliest stages, when pregnancy cannot as yet be detected by other signs, the author concludes that Manoiloff's test in its present form is of no especial value. It was also observed that it is not entirely specific for pregnancy, since positive reactions were noted in nonpregnant women with carcinoma.

Curettage in Treatment of Gonorrheal Endometritis.—Orsós states that in most cases of gonorrheal endometritis he employs a protective local therapy combined with parenteral vaccinotherapy and with diathermy. However, he found that about 10 per cent of the cases are refractory to this treatment. In such cases and in those with a protracted course he employed curettage, in spite of the fact that many leading authorities advise against it. He reasoned that in protracted cases the mucous membrane of the cervix and of the uterus become inflamed and hypertrophied, and that the tissues can no longer produce protective substances, whereas the bacteria grow abundantly in the large folds of the mucous membrane. If the diseased mucous membrane is removed by curettage the remaining gonococci, whose virulence has been weakened, are combated by the immunizing action of the blood, the serum and the newly forming epithelium. Thus the curative action of curettage is due to two factors; namely, (1) to the removal of the diseased mucous membrane and of the bacteria, and (2) to the biologic function of the granulating wound surface, which is partly bactericidal and partly immunizatory. Of 394 women with gonorrhea, the uterus was curetted in sixty-three. The author describes the method of curettage and then reports the therapeutic results. He is convinced that in protracted cases of gonorrheal endometritis curettage is helpful, and if correctly done it is without danger.

Vrachebonoe Delo, Kharkov

13: 1185-1264 (Sept. 1) 1930

*Hemato-Encephalitic Barrier in Patients with Nervous Diseases. M. Krol and V. Sheynyuk.—p. 1203.
Hematin Reaction in Cases of Interrupted Extra-Uterine Pregnancy. O. Antoshina.—p. 1213.
Skin Disease Developing in Workers Handling Lemons. D. Shapiro. —p. 1240.
Trunecek's Serum in Treatment of Arteriosclerosis. S. Kaufman.—p. 1249.

Permeability Quotient of Meninges in Nervous Diseases.—Krol and Sheynyuk, in determining the meningeal permeability in patients with nervous diseases, gave about 4 Gm. of sodium bromide daily by mouth for five days. The proportion of bromine found then in the blood serum to that found in the cerebrospinal fluid indicated the permeability quotient (PQ). A permeability quotient ranging from 2.9 to 3.3 was considered normal. The fluid and the blood were removed while the patient was fasting. In over 33 per cent of twenty-seven patients with epidemic encephalitis the permeability quotient was increased, thus pointing to a decreased permeability of the meningeal barrier. The increase was particularly marked in cases presenting severe parkinsonian signs. In cases with a Parkinson syndrome a normal permeability quotient confirmed that the epidemic encephalitis was not the causal factor. The permeability quotient was normal in four cases of chorea. In none of thirty-two patients with neurosyphilis was it increased; in twenty-one cases it was below the normal, in nine cases at the lower normal limit and in two above this limit. It was especially low in cases of tabes and dementia paralytica. In all fifteen patients with epileptic seizures, except two, it proved to be normal. In cases of epidemic cerebrospinal meningitis it was decreased. It appeared normal in cases of poliomyelitis, disseminated myelitis and encephalomyelitis of infectious origin. Of fourteen patients with multiple sclerosis the permeability quotient was decreased only in two with a suspected syphilis. In a few of them, contrary to what is observed in cases of syphilis or meningitis, pleocytosis coexisted with a normal amount of albumin in the cerebrospinal fluid and with a normal permeability quotient. In none of eleven cases of gliosis was it below the normal. In four instances it was notably increased; in three of them the disease was in an advanced stage. In fifteen cases of tumor of the brain or spinal cord, the permeability quotient was constantly decreased and the permeability of the meninges increased. In such cases the decrease of the permeability quotient indicated an increase of intracranial pressure. Among twenty patients with vascular lesions of the brain, the permeability quotient was increased in one and decreased in seven. Of twenty-four cases of sciatica, it was increased in two and decreased in two; it was normal in the remainder. In three of four cases of schizophrenia it was normal and in one it was increased. It appeared normal in cases of epilepsy; evidently the occurrence of seizures is not connected with changes in the permeability of the meninges. The authors emphasize that determination of the permeability quotient may help in the diagnosis.

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*Cellular Activity and Cellular Structure as Studied in Exophthalmic Goiter. H. Okkels.—p. 65.

Cellular Activity as Studied in Exophthalmic Goiter.—Okkels states that of the two types of proliferative changes in goiter the one, found in exophthalmic goiter, is a tendency to solidification of the parenchymatous tissue; the other, mainly seen in simple goiter, is chiefly characterized by a peripheral budding off of new vesicles. In the large columnar epithelial cells in hyperplastic tissue in exophthalmic goiter the nucleus sometimes shows mitotic figures; in simple goiter the cell division seems to be exclusively amitotic. In exophthalmic goiter a constant universal enlargement of the Golgi apparatus is demonstrable; there is no such enlargement in simple goiter. In exophthalmic goiter vacuolization of the cells is fairly constant. Pure strains of lymphocytes are encountered only in the rare infiltrations in simple goiter. Lymphoid infiltration in exophthalmic goiter is explained as due to (1) loss by the thyroid cells of their capacity for making colloid, (2) failure of histotypical formation of alveoli, and (3) hyperactivity of the thyroid cells proper. The whole complex in exophthalmic goiter is seen to hinge on cellular hyperactivity, proliferation, collapse of storage secretion, and textural derangement.

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36: 1-146 (Feb. 1) 1931

Medical Career in Sweden from Point of View of Occupational Statistics. G. Dahlberg.—p. 1.
*Dangers of Intoxication from Ignition and Combustion of Roentgen Films. C. Naeslund.—p. 63.
Application of Test of Strength of Cutaneous Capillaries to Determine Standard of Vitamin C and Need of Vitamin C in Healthy Persons. G. F. Göthlin.—p. 75.
Curve of Venous Pressure in Artificial Stasis, Measure of Capillary Resistance, Precapillary Resistance and Circulation Rate in Blood Vessel System in Arm. C. Grill.—p. 113.
Coronary Circulation as Overlooked Factor in Explanation of Phenomena or Heart Pressure and Sound. H. Laurell.—p. 133.

Intoxication from Ignition and Combustion of Roentgen Films.—While Naeslund does not belittle the danger of toxic gases from the combustion of roentgen films, he thinks that the Cleveland Clinic disaster should not lead to excessively rigorous precautionary measures or to the rejection of the inflammable film in favor of the "safety" film.